TEXAS REGISTER

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THE GOVERNOR

As required by Government Code, §2002.011(4), the *Texas Register* publishes executive orders issued by the Governor of Texas. Appointments and proclamations are also published. Appointments are published in chronological order. Additional information on documents submitted for publication by the Governor's Office can be obtained by calling (512) 463-1828.

Proclamation 41-4217

TO ALL TO WHOM THESE PRESENTS SHALL COME:

I, GREG ABBOTT, Governor of the State of Texas, by the authority vested in me by Article III, Sections 5(a) and 40, and Article IV, Section 8(a) of the Texas Constitution, do hereby call a Special Session of the 89th Legislature, to convene in the City of Austin, commencing at 12:00 p.m. on Monday, July 21, 2025, to consider and act upon the following:

Legislation to improve early warning systems and other preparedness infrastructure in flood-prone areas throughout Texas.

Legislation to strengthen emergency communications and other response infrastructure in flood-prone areas throughout Texas.

Legislation to provide relief funding for response to and recovery from the storms which began in early July 2025, including local match funding for jurisdictions eligible for FEMA public assistance.

Legislation to evaluate and streamline rules and regulations to speed preparedness for and recovery from natural disasters.

Legislation to eliminate the STAAR test and replace it with effective tools to assess student progress and ensure school district accountability.

Legislation reducing the property tax burden on Texans and legislation imposing spending limits on entities authorized to impose property taxes.

Legislation making it a crime to provide hemp-derived products to children under 21 years of age.

Legislation to comprehensively regulate hemp-derived products, including limiting potency, restricting synthetically modified compounds, and establishing enforcement mechanisms, all without banning a lawful agricultural commodity.

Legislation further protecting unborn children and their mothers from the harm of abortion.

Legislation prohibiting taxpayer-funded lobbying, including the use of tax dollars to hire lobbyists and payment of tax dollars to associations that lobby the Legislature.

Legislation, similar to Senate Bill No. 1278 from the 89th Legislature, Regular Session, that protects victims of human trafficking from criminal liability for non-violent acts closely tied to their own victimization.

Legislation that protects law enforcement officers from public disclosure of unsubstantiated complaints in personnel files.

Legislation protecting women's privacy in sex-segregated spaces.

Legislation proposing a constitutional amendment allowing the Attorney General to prosecute state election crimes.

Legislation that provides a revised congressional redistricting plan in light of constitutional concerns raised by the U.S. Department of Justice.

Legislation, similar to Senate Bill No. 648 from the 89th Legislature, Regular Session, that provides strengthened protections against title theft and deed fraud.

Legislation, similar to Senate Bill No. 1253 from the 89th Legislature, Regular Session, that authorizes political subdivisions to reduce impact fees for builders who include water conservation and efficiency measures.

Legislation, similar to Senate Bill No. 2878 from the 89th Legislature, Regular Session, relating to the operation and administration of the Judicial Department of state government.

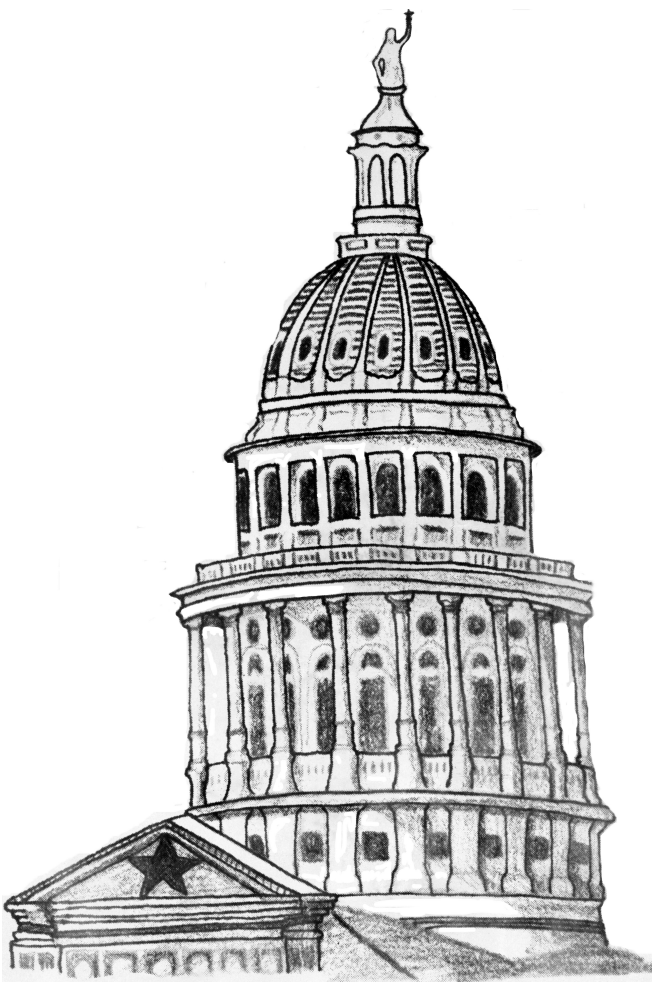
The Secretary of State will take notice of this action and will notify the members of the legislature of my action.

IN TESTIMONY WHEREOF, I have hereunto signed my name and have officially caused the Seal of State to be affixed at my office in the City of Austin, Texas, this the 9th day of July, 2025.

Greg Abbott, Governor

TRD-202502381

♦ ♦ ♦



THE ATTORNEY GENERAL

The *Texas Register* publishes summaries of the following: Requests for Opinions, Opinions, and Open Records Decisions.

An index to the full text of these documents is available on the Attorney General's website at https://www.texas.attorneygeneral.gov/attorney-general-opinions. For information about pending requests for opinions, telephone (512) 463-2110.

An Attorney General Opinion is a written interpretation of existing law. The Attorney General writes opinions as part of his responsibility to act as legal counsel for the State of Texas. Opinions are written only at the request of certain state officials. The Texas Government Code indicates to whom the Attorney General may provide a legal opinion. He may not write legal opinions for private individuals or for any officials other than those specified by statute. (Listing of authorized requestors: https://www.texasattorneygeneral.gov/attorney-general-opinions.)

Requests for Opinions

RQ-0605-KP

Requestor:

Mr. Darrel D. Spinks

Executive Director

Texas Behavioral Health Executive Council

1801 Congress Avenue, Suite 7.300

Austin, Texas 78701

Re: Interpretation of "health care provider" under Tex. Health & Safety Code § 161.701(2) and associated issues (RQ-0605-KP)

Briefs requested by August 7, 2025

RQ-0606-KP

Requestor:

The Honorable Rodolfo Gutierrez

Jim Hogg County Attorney

Post Office Box 847

Hebbronville, Texas 78361

Re: Scope of Tex. Educ. Code § 11.067 (RQ-0606-KP)

Briefs requested by August 7, 2025

RQ-0607-KP

Requestor:

The Honorable Amanda Oster

Aransas County Attorney

2840 Highway 35 North

Rockport, Texas 78382

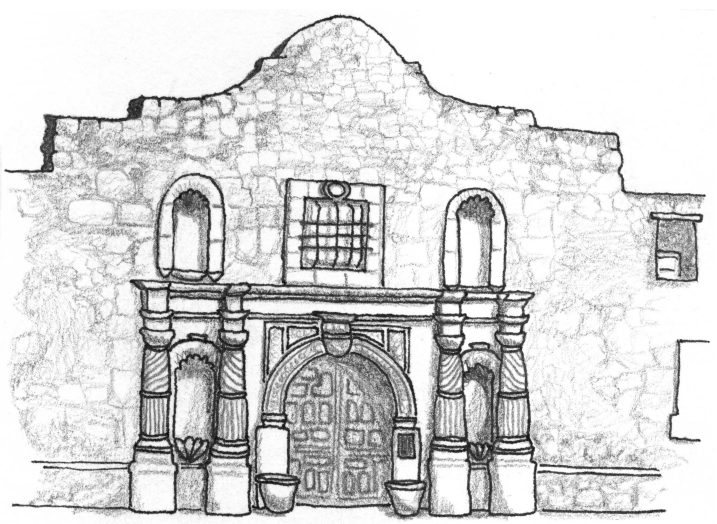
Re: Regarding a county's rights, duties, and responsibilities concerning the purchase of property restricted by a conservation easement and funded by a state agency grant (RQ-0607-KP)

Briefs requested by August 8, 2025

For further information, please access the website at www.texasattorneygeneral.gov or call the Opinion Committee at (512) 463-2110.

TRD-202502517
Justin Gordon
General Counsel
Office of the Attorney General
Filed: July 15, 2025

♦ ♦ ♦



Emergency Rules include new rules, amendments to existing rules, and the repeals of existing rules. A state agency may adopt an emergency rule without prior notice or hearing if the agency finds that an imminent peril to the public health, safety, or welfare, or a requirement of state or federal law, requires adoption of a rule on fewer than 30 days' notice. An emergency rule may be effective for not longer than 120 days and may be renewed once for not longer than 60 days (Government Code, §2001.034).

TITLE 43. TRANSPORTATION

PART 10. TEXAS DEPARTMENT OF MOTOR VEHICLES

CHAPTER 224. ADJUDICATIVE PRACTICE AND PROCEDURE

SUBCHAPTER D. MOTOR CARRIER AND OVERSIZE OR OVERWEIGHT VEHICLE OR LOAD ENFORCEMENT

43 TAC §§224.116, 224.121, 224.124

INTRODUCTION. The Texas Department of Motor Vehicles (department) adopts, on an emergency basis, revisions to 43 Texas Administrative Code (TAC) Chapter 224, Subchapter D, Motor Carrier and Oversize or Overweight Vehicle or Load Enforcement, by amending §224.116 and §224.124, and adding new §224.121, regarding the requirements and procedures under Transportation Code, §643.2526. The amendments and new section are necessary to implement House Bill (HB) 1672, 89th Legislature, Regular Session (2025). Adopted amendments are also necessary to clean up the rule text.

Government Code, §2001.034 authorizes a state agency to adopt an emergency rule without prior notice or hearing if the agency finds that a requirement of state law requires adoption of a rule on fewer than 30 days' notice. Emergency rules adopted under Government Code, §2001.034 may not be effective for longer than 120 days and may not be renewed for longer than 60 days.

EXPLANATION.

This emergency rulemaking is necessary because HB 1672 became effective on May 24, 2025, and requires the department to adopt rules to create the requirements and procedures for the following under Transportation Code, §643.2526: 1) the revocation or suspension of a motor carrier's registration; 2) the placement of a motor carrier on probation whose registration is suspended; and 3) the motor carrier's appeal of the revocation, suspension or probation. The board of the Texas Department of Motor Vehicles (board) did not meet in May or June of 2025 to approve the adoption of these emergency rules. The board met on July 10, 2025, and approved the adoption of these emergency rules.

Adopted amendments to §224.116 implement HB 1672 by modifying the title of the section and adding new subsection (h) to clarify that these administrative procedures do not apply to a proceeding under Transportation Code, §643.2526. Section 224.116 provides the administrative procedures for a proceeding under laws that require the department to provide written notice to the person and an opportunity for the person to request a hearing before the department takes an administrative action against the person. Because Transportation Code, §643.2526 states that a department action under §643.2526 is not required to be preceded by notice and an opportunity for hearing, the department adopts amendments to §224.116 to clarify that this section does not apply to a proceeding under §643.2526. Adopted amendments to §224.116(a) are also necessary to clean up the rule text by adding a hyphen to the term "first class mail" to read "first-class mail."

Adopted new §224.121 and amendments to §224.124 are necessary to implement amendments made by HB 1672 to Transportation Code, §643.2526. Sections 224.121 and 224.124 govern the requirements and procedures under Transportation Code, §643.2526, which authorizes the department to deny an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643 (Motor Carrier Registration) prior to providing the person with notice and an opportunity for hearing. Upon request by the Texas Department of Public Safety (DPS) under Transportation Code, §643.252(b), and prior to providing the person with notice and an opportunity for hearing, the department is also authorized under Transportation Code, §643.2526 to revoke or suspend the registration of a motor carrier or to place a motor carrier on probation whose registration is suspended, if the motor carrier has an unsatisfactory safety rating under 49 C.F.R. Part 385 (Safety Fitness Procedures), which is determined by the Federal Motor Carrier Safety Administration (FMCSA); or multiple violations of Transportation Code, Chapter 644 (Commercial Motor Vehicle Safety Standards), a rule adopted under Chapter 644, or Subtitle C (Rules of the Road) of Transportation Code, Title 7 (Vehicles and Traffic), which is determined by DPS. The references to registration under Transportation Code, Chapter 643 are references to operating authority to operate as a motor carrier, rather than vehicle registration under Transportation Code, Chapter 502.

Adopted new §224.121 is necessary to provide the requirements and procedures regarding the department's action under Transportation Code, §643.2526. Adopted new §224.121(a) states that the department will only revoke a motor carrier's registration under Transportation Code, §643.2526 pursuant to a request from DPS under Transportation Code, §643.252(b). Although Transportation Code, §643.252(b) authorizes DPS to request the department to suspend or revoke a registration issued to a motor carrier under Transportation Code, Chapter 643, or to place on probation a motor carrier whose registration is suspended, the department will only revoke the registration of a motor carrier under Transportation Code, §643.252(b). The department's current system is not programmed to suspend a motor carrier's registration, so revocation is the only option.

Also, the DPS rule regarding DPS's request to the department under Transportation Code, §643.252(b) only refers to a revocation of the motor carrier's registration. *See* 37 TAC §4.19(a). Transportation Code, §644.051(b) states that a DPS

rule adopted under Transportation Code, Chapter 644 must be consistent with federal regulations. Section 4.19(a), which was adopted under the DPS rulemaking authority in Transportation Code, §644.051, is consistent with 49 C.F.R. §385.13(e), which states that if an interstate motor carrier has a final unsatisfactory safety rating, FMCSA will provide notice to the motor carrier and issue an order revoking the motor carrier's interstate registration, which is also known as operating authority to operate as a motor carrier in interstate transportation. Because DPS does not administer Transportation Code, Chapter 643, DPS must request the department to revoke a motor carrier's registration for intrastate transportation.

Adopted new §224.121(a) also states that the department will not take action under Transportation Code, §643.252(b) until FMCSA or DPS, as applicable, issues an order regarding the laws referenced in §643.252(b). This requirement is necessary to help protect the person's due process rights because Transportation Code, §643.2526 authorizes the department to take action against the person prior to providing notice and an opportunity for a hearing. FMCSA and DPS are required to comply with the due process requirements under the laws that govern their actions when issuing an order under the laws referenced in Transportation Code, §643.252(b). The process set out in adopted new §224.121(a) ensures that while a motor carrier may not receive notice and an opportunity for a hearing from the department before the department revokes the motor carrier's registration, the motor carrier should have received full due process on the same factual and legal allegations from either FMCSA or DPS.

The FMCSA order under 49 C.F.R. §385.13(d)(1) is called an out-of-service order, which prohibits the motor carrier from engaging in interstate transportation. *See* 49 U.S.C. §31144(c) and 49 C.F.R. §385.1(a) and §385.13(d)(1). The FMCSA procedures and proceedings regarding an out-of-service order are governed by 49 U.S.C. §31144, 49 C.F.R. Part 385 (Safety Fitness Procedures), and 49 C.F.R. Part 386 (Rules of Practice for FMCSA Proceedings).

The DPS order under Transportation Code, §644.155 and 37 TAC §4.15 is called an order to cease, which prohibits the motor carrier from operating a commercial motor vehicle in intrastate transportation. The DPS proceedings regarding an order to cease are governed by 37 TAC §4.15 and §4.18. The DPS order to cease tells the motor carrier that it must immediately cease all intrastate transportation until such time as DPS determines the motor carrier's safety rating is no longer unsatisfactory.

Adopted new §224.121(b) states that the department will issue notice of the department's action under Transportation Code, §643.2526 to the person by email and first-class mail using the person's last known address in the department's records. The notice requirements under Government Code, §2001.054(c) do not apply to the department's notice regarding the department's action under Transportation Code, §643.2526 because Transportation Code, §643.2526(a) says that the department's action under Transportation Code, §643.252(b) is not required to be preceded by notice and an opportunity for hearing, notwithstanding other law. Also, the motor carrier should have already received due process under the DPS or FMCSA proceeding that resulted in an order to cease or out-of-service order, respectively.

Adopted amendments to §224.124 implement HB 1672 by modifying the title of the section to refer to an appeal of a department action. Adopted amendments to §224.124 delete subsection (a), and amend existing subsections (b) and (c) to expand the scope of the rule to be consistent with the expanded scope of Transportation Code, §643.2526, as amended by HB 1672. An adopted amendment to existing subsection (b) clarifies that Subchapter E of Chapter 224 of this title is not the only subchapter in Chapter 224 that would apply to an appeal to the department under Transportation Code, §643.2526. Adopted amendments re-letter existing subsections (b), (c), and (d) due to the deletion of subsection (a).

Adopted new §224.124(d) states that on appeal under Transportation Code, §643.2526, the department will not rescind a revocation under Transportation Code, §643.252(b), based on the motor carrier taking corrective action that results in an upgrade to its unsatisfactory safety rating after the department issued notice to the motor carrier that it revoked the motor carrier's registration. DPS wants the department to immediately revoke a motor carrier's registration under Transportation Code, Chapter 643 once DPS requests the department to revoke under Transportation Code, §643.252(b). The department will not wait to see if the motor carrier takes either of the following actions prior to revoking the motor carrier's registration: 1) requests DPS or FMCSA, as applicable, to change the final safety rating or to conduct a review regarding the final safety rating; or 2) appeals their final safety rating to a court under the laws that govern the DPS or FMCSA order, as applicable.

FMCSA's regulation states that a motor carrier that has taken action to correct the deficiencies that resulted in a final rating of "unsatisfactory" may request a rating change at any time. *See* 49 C.F.R. §385.17(a). Another FMCSA regulation states as follows: 1) that a motor carrier may request FMCSA to conduct an administrative review if it believes that FMCSA committed an error in assigning the final safety rating; 2) that FMCSA's decision under the administrative review constitutes the final agency action; and 3) that a motor carrier may request a rating change under the provisions of 49 C.F.R. §385.17. *See* 49 C.F.R. §385.15. In addition, federal law authorizes the motor carrier to appeal FMCSA's final order to the applicable United States Court of Appeals under 49 U.S.C. §521(b)(9) and 49 C.F.R. §386.67. Therefore, it is possible that FMCSA could change a motor carrier's safety rating from unsatisfactory to satisfactory or conditional after FMCSA issued the out-of-service order to the motor carrier and after the department revoked the motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b).

The DPS administrative rule states that a motor carrier that has taken action to correct the deficiencies that resulted in a final rating of "unsatisfactory" may request a rating change at any time. *See* 37 TAC §4.15(b)(3)(G). The DPS rule also states that the motor carrier may request DPS to conduct a departmental review if the motor carrier believes that DPS has committed error in assigning the final safety rating, that the final safety rating under the DPS departmental review constitutes a final agency decision, and that any judicial review of the DPS final agency decision is subject to Government Code, Chapter 2001. *See* 37 TAC §4.15(b)(3)(H) and (I). Therefore, it is possible that DPS could change a motor carrier's safety rating from unsatisfactory to satisfactory or conditional after DPS issued the order to cease to the motor carrier and after the department revoked the motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b).

Once the department issues a revocation under Transportation Code, §643.2526, the revocation is effective and cannot be rescinded unless the motor carrier submits a timely appeal under §643.2526. If the motor carrier timely submits an appeal

under Transportation Code, §643.2526, if the underlying order from DPS or FMCSA was issued in compliance with the motor carrier's due process rights, and if the requirements under Transportation Code, §643.252(b) were met at the time DPS requested the department to revoke the motor carrier's registration, the department's revocation will not be rescinded on appeal to the department. If the motor carrier resolves its unsatisfactory safety rating and is no longer subject to the order to cease or out-of-service order after the department revokes the motor carrier's registration, the evidence on appeal will not show any error regarding the department's revocation. However, an appeal of a revocation under Transportation Code, §643.2526 may result in a rescission of the revocation if the underlying order from DPS or FMCSA, as applicable, was issued in violation of the motor carrier's due process rights or was issued to the motor carrier in error.

When determining whether to request the department to revoke the motor carrier's registration under Transportation Code, §643.252(b), it is within DPS's discretion to consider whether the motor carrier's unsatisfactory safety rating might change to a satisfactory or conditional safety rating after the issuance of an order to cease or an out-of-service order. Once the department receives the request from DPS to revoke the motor carrier's registration under Transportation Code, §643.252(b), the department will immediately revoke the registration. If the department revoked a motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b), and the motor carrier later improves its safety rating and is no longer subject to an out-of-service order or an order to cease, the department will take this fact into consideration when reviewing the motor carrier's application for reregistration under Transportation Code, §643.0585 or the motor carrier's application for registration under Transportation Code, §643.052.

Adopted new §224.124(e) requires the person who submits an appeal to the department under Transportation Code, §643.2526 to state why the person claims the department's action is erroneous, as well as the legal and factual basis for the claimed error. This information is necessary to enable the department to comply with a requirement to docket the contested case with the State Office of Administrative Hearings under 1 TAC §155.53(a)(1), which requires the Request to Docket Case form to be submitted together with the complaint or other pertinent documents describing the agency action giving rise to the contested case.

STATUTORY AUTHORITY. The department adopts the amendments under Transportation Code, §643.2526(d), which requires the department to adopt rules as necessary to implement §643.2526, including rules governing the requirements and procedures under §643.2526; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §643.252, which authorizes the department to suspend, revoke, or deny a registration issued under Transportation Code, Chapter 643 or place on probation a motor carrier whose registration is suspended; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The adopted amendments implement Government Code, Chapter 2001; and Transportation Code, §§643.252(b), 643.2526, and 1002.001.

§224.116. Administrative Proceedings, Excluding Proceedings Under Transportation Code, §643.2526.

(a) If the department decides to take an enforcement action under §218.16 of this title (relating to Insurance Requirements) for the revocation of self-insured status, §218.64 of this title (relating to Rates), §218.71 of this title (relating to Administrative Penalties), §219.121 of this title (relating to Administrative Penalties and Sanctions under Transportation Code, §623.271), §218.72 of this title (relating to Administrative Sanctions), or §219.126 of this title (relating to Administrative Penalty for False Information on Certificate by a Shipper), the department shall mail a Notice of Department Decision to the person by first-class [~~first class~~] mail to the last known address as shown in department records. If the enforcement action falls under the Memorandum of Agreement with the Federal Motor Carrier Safety Administration (FMCSA) under §218.71, the department shall mail the Notice of Department Decision to the person by first-class [~~first class~~] mail to the last known address as shown in FMCSA's records.

(b) The Notice of Department Decision shall include:

(1) a brief summary of the alleged violation or enforcement action being proposed;

(2) a statement describing each sanction, penalty, or enforcement action proposed;

(3) a statement informing the person of the right to request a hearing;

(4) a statement of the procedure a person must use to request a hearing, including the deadline for filing a request with the department and the acceptable methods to request a hearing; and

(5) a statement that a proposed penalty, sanction, or enforcement action will become final and take effect on a specific date if the person fails to request a hearing.

(c) A person must submit to the department a written request for a hearing to the address provided in the Notice of Department Decision not later than the 26th day after the date the notice is mailed by the department; however, this requirement does not apply to a contested case that falls under §218.64 and Transportation Code, §643.154.

(d) If a person submits a timely written request for a hearing or the contested case that falls under §218.64 and Transportation Code, §643.154, the department will contact the person and attempt to informally resolve the contested case. If the person and the department cannot informally resolve the contested case, the department will refer the contested case to SOAH to set a hearing date and will give notice of the time and place of the hearing to the person.

(e) Except as provided by Transportation Code, §643.154, if the person does not make a timely request for a hearing or agree to settle a contested case within 26 days of the date the Notice of Department Decision was mailed, the allegations are deemed admitted on the 27th day and a final order including sanctions and penalties may be issued by the final order authority.

(f) Except as provided by statute and the applicable provisions of this chapter, any SOAH proceeding is governed by Government Code, Chapter 2001 and 1 TAC Chapter 155, including the authority of the department to informally dispose of the contested case by stipulation, agreed settlement, consent order, or default. The department will follow the process set forth in Transportation Code, §643.2525 and the applicable provisions of this chapter when enforcing the federal laws

and regulations cited in §218.71 to the extent authorized by applicable federal laws and regulations.

(g) The department and the person may informally resolve the contested case by entering into a settlement agreement or agreeing to stipulations at any time before the director issues a final order. However, the person must pay any penalty in full prior to the execution of a settlement agreement.

(h) This section does not apply to a department action under Transportation Code, §643.2526.

§224.121. Administrative Proceedings under Transportation Code, §643.2526.

(a) The department will only revoke the registration of a motor carrier under Transportation Code, §643.2526 pursuant to a request from the Texas Department of Public Safety under Transportation Code, §643.252(b) after the issuance of an order by the following, as applicable:

(1) the Federal Motor Carrier Safety Administration regarding an unsatisfactory safety rating under 49 C.F.R. Part 385; or

(2) the Texas Department of Public Safety regarding multiple violations of the following:

(A) Transportation Code, Chapter 644;

(B) a rule adopted under Transportation Code, Chapter 644; or

(C) Subtitle C of Title 7 of the Transportation Code.

(b) The department will issue notice of the department's action under Transportation Code, §643.2526 to the person by email and first-class mail using the person's last known address in the department's records.

§224.124. Appeal of Department Action [~~of Denial~~] Under Transportation Code, §643.2526.

[~~(a) Pursuant to Transportation Code, §643.2526, an applicant may appeal the denial of an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643.~~]

(a) [~~(b)~~] An [~~The~~] appeal to the department under Transportation Code, §643.2526 will be governed by Chapter 224[~~, Subchapter E~~] of this title (relating to Adjudicative Practice and Procedure). [~~Contested Cases Referred to SOAH).~~]

(b) [~~(c)~~] An [~~The applicant's~~] appeal will be considered untimely if it is not filed with the department by the 26th day after the date of the department's issuance of notice of the department's action. [~~denial of the application.~~] The department will not consider an untimely appeal.

(c) [~~(d)~~] An application that is withdrawn under Transportation Code, §643.055 is not a denial of an application for the purposes of an appeal under Transportation Code, §643.2526.

(d) On appeal, the department will not rescind a revocation under Transportation Code, §643.252(b) based on the motor carrier taking corrective action that results in an upgrade to its unsatisfactory safety rating after the department issued notice to the motor carrier that the department revoked the motor carrier's registration.

(e) An appeal under Transportation Code, §643.2526 must state why the person claims the department's action is erroneous, as well as the legal and factual basis for the claimed error.

The agency certifies that legal counsel has reviewed the emergency adoption and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502323
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Effective date: July 10, 2025
Expiration date: November 6, 2025
For further information, please call: (512) 465-4160

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Proposed rules include new rules, amendments to existing rules, and repeals of existing rules. A state agency shall give at least 30 days' notice of its intention to adopt a rule before it adopts the rule. A state agency shall give all interested persons a reasonable opportunity to submit data, views, or arguments, orally or in writing (Government Code, Chapter 2001).

Symbols in proposed rule text. Proposed new language is indicated by underlined text. [~~Square brackets and strikethrough~~] indicate existing rule text that is proposed for deletion. "(No change)" indicates that existing rule text at this level will not be amended.

TITLE 10. COMMUNITY DEVELOPMENT

PART 1. TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS

CHAPTER 1. ADMINISTRATION

SUBCHAPTER A. GENERAL POLICIES AND PROCEDURES

10 TAC §1.8

The Texas Department of Housing and Community Affairs (the Department) proposes the repeal of 10 TAC §1.8, Plan Requirements, Process and Approval Criteria for Properties Designated for Camping by Political Subdivisions for Homeless Individuals. The purpose of the proposed repeal is to correct an email address and make minor technical corrections.

Tex. Gov't Code §2001.0045(b) does not apply to the rule proposed for action because it was determined that no costs are associated with this action, and therefore no costs warrant being offset.

The Department has analyzed this proposed rulemaking and the analysis is described below for each category of analysis performed.

a. GOVERNMENT GROWTH IMPACT STATEMENT REQUIRED BY TEX. GOV'T CODE §2001.0221.

Mr. Bobby Wilkinson has determined that, for the first five years the repeal would be in effect:

1. The repeal does not create or eliminate a government program but relates to changes to an existing activity: requirements relating to the Department review of submissions by political subdivisions of properties designated for camping by homeless individuals.

2. The repeal does not require a change in work that would require the creation of new employee positions, nor are the rule changes significant enough to reduce work load to a degree that eliminates any existing employee positions.

3. The repeal does not require additional future legislative appropriations.

4. The repeal will not result in an increase in fees paid to the Department, nor in a decrease in fees paid to the Department.

5. The repeal is not creating a new regulation, except that it is being replaced by a new rule simultaneously to provide for revisions.

6. The repeal will not expand, limit, or repeal an existing regulation.

7. The repeal will not increase or decrease the number of individuals subject to the rule's applicability.

8. The repeal will not negatively or positively affect the state's economy.

b. ADVERSE ECONOMIC IMPACT ON SMALL OR MICRO-BUSINESSES OR RURAL COMMUNITIES AND REGULATORY FLEXIBILITY REQUIRED BY TEX. GOV'T CODE §2006.002.

The Department has evaluated the repeal and determined that the repeal will not create an economic effect on small or micro-businesses or rural communities.

c. TAKINGS IMPACT ASSESSMENT REQUIRED BY TEX. GOV'T CODE §2007.043. The repeal does not contemplate or authorize a taking by the Department; therefore, no Takings Impact Assessment is required.

d. LOCAL EMPLOYMENT IMPACT STATEMENTS REQUIRED BY TEX. GOV'T CODE §2001.024(a)(6).

The Department has evaluated the repeal as to its possible effects on local economies and has determined that for the first five years the repeal would be in effect there would be no economic effect on local employment; therefore, no local employment impact statement is required to be prepared for the rule.

e. PUBLIC BENEFIT/COST NOTE REQUIRED BY TEX. GOV'T CODE §2001.024(a)(5). Mr. Wilkinson has determined that, for each year of the first five years the repeal is in effect, the public benefit anticipated as a result of the changed section would be an updated and more germane rule. There will not be economic costs to individuals required to comply with the repealed section.

f. FISCAL NOTE REQUIRED BY TEX. GOV'T CODE §2001.024(a)(4). Mr. Wilkinson also has determined that for each year of the first five years the repeal is in effect, enforcing or administering the repeal does not have any foreseeable implications related to costs or revenues of the state or local governments.

REQUEST FOR PUBLIC COMMENT. The public comment period will be held July 25, 2025 through August 25, 2025, to receive input on the proposed action. Comments may be submitted to the Texas Department of Housing and Community Affairs, Attn: Brooke Boston at brooke.boston@tdhca.texas.gov. ALL COMMENTS MUST BE RECEIVED BY 5:00 p.m., Austin local time, August 25, 2025.

STATUTORY AUTHORITY. The repeal is made pursuant to Tex. Gov't Code §2306.053, which authorizes the Department to adopt rules.

Except as described herein the repeal affects no other code, article, or statute.

§1.8. Plan Requirements, Process and Approval Criteria for Properties Designated for Camping by Political Subdivisions for Homeless Individuals.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502365
Bobby Wilkinson
Executive Director
Texas Department of Housing and Community Affairs
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 475-3959

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10 TAC §1.8

The Texas Department of Housing and Community Affairs (the Department) proposes new 10 TAC §1.8, Camping Plan Requirements and Process for Political Subdivisions. This includes a title change from the rule being repealed. The purpose of the proposed rule is to include an updated email address and make minor technical corrections.

Tex. Gov't Code §2001.0045(b) does not apply to the rule because it was determined that no costs are associated with this action, and therefore no costs warrant being offset.

The Department has analyzed this rulemaking and the analysis is described below for each category of analysis performed.

a. GOVERNMENT GROWTH IMPACT STATEMENT REQUIRED BY TEX. GOV'T CODE §2001.0221.

Mr. Bobby Wilkinson has determined that, for the first five years the new section would be in effect:

1. The new section does not create or eliminate a government program but relates to changes to an existing activity: requirements relating to the Department review of submissions by political subdivisions of properties designated for camping by homeless individuals.

2. The new section does not require a change in work that would require the creation of new employee positions, nor are the rule changes significant enough to reduce work load to a degree that eliminates any existing employee positions.

3. The new section does not require additional future legislative appropriations.

4. The new section will not result in an increase in fees paid to the Department, nor in a decrease in fees paid to the Department.

5. The new section is not creating a new regulation, except that they are replacing sections being repealed simultaneously to provide for revisions.

6. The new section will not expand, limit, or repeal an existing regulation.

7. The new section will not increase or decrease the number of individuals subject to the rule's applicability.

8. The new section will not negatively or positively affect the state's economy.

b. ADVERSE ECONOMIC IMPACT ON SMALL OR MICRO-BUSINESSES OR RURAL COMMUNITIES AND REGULATORY FLEXIBILITY REQUIRED BY TEX. GOV'T CODE §2006.002.

The Department has evaluated the new section and determined that it will not create an economic effect on small or micro-businesses or rural communities.

c. TAKINGS IMPACT ASSESSMENT REQUIRED BY TEX. GOV'T CODE §2007.043. The new section does not contemplate nor authorize a taking by the Department; therefore, no Takings Impact Assessment is required.

d. LOCAL EMPLOYMENT IMPACT STATEMENTS REQUIRED BY TEX. GOV'T CODE §2001.024(a)(6).

The Department has evaluated the new section as to its possible effects on local economies and has determined that for the first five years the new section would be in effect there would be no economic effect on local employment; therefore, no local employment impact statement is required to be prepared for the rule.

e. PUBLIC BENEFIT/COST NOTE REQUIRED BY TEX. GOV'T CODE §2001.024(a)(5). Mr. Wilkinson has determined that, for each year of the first five years the new section is in effect, the public benefit anticipated as a result of the new section would be a more current and germane rule. There will not be economic costs to individuals required to comply with the new section.

f. FISCAL NOTE REQUIRED BY TEX. GOV'T CODE §2001.024(a)(4). Mr. Wilkinson also has determined that for each year of the first five years the new section is in effect, enforcing or administering the section does not have any foreseeable implications related to costs or revenues of the state or local governments.

REQUEST FOR PUBLIC COMMENT. The public comment period will be held July 25, 2025 through August 25, 2025, to receive input on the proposed action. Comments may be submitted to the Texas Department of Housing and Community Affairs, Attn: Brooke Boston at brooke.boston@tdhca.texas.gov. ALL COMMENTS MUST BE RECEIVED BY 5:00 p.m., Austin local time, August 25, 2025.

STATUTORY AUTHORITY. The new section is made pursuant to Tex. Gov't Code §2306.053, which authorizes the Department to adopt rules.

Except as described herein the new sections affects no other code, article, or statute.

§1.8. Camping Plan Requirements and Process for Political Subdivisions.

(a) Purpose. Subchapter PP of Chapter 2306, Texas Government Code, Property Designated by Political Subdivision for Camping by Homeless Individuals, was enacted in September 2021. §2306.1122 of the Texas Government Code, provides that a Political Subdivision may not designate a property to be used by homeless individuals to Camp unless the Department has approved a Plan as further described by Subchapter PP. This rule provides the Department's policies for such Plans, including the process for Plan submission, Plan requirements, the review process, and the criteria by which a Plan will be reviewed by the Department.

(b) Applicability.

(1) This rule applies only to the designation and use of a property designated for camping by homeless individuals that first begins that use on or after September 1, 2021, except that the rule and requirements of Subchapter PP, Chapter 2306, Texas Government Code,

do not apply to a Proposed Property to be located on/in a Public Park. Public Parks are ineligible to be used as a Camp by homeless individuals per Subchapter PP, Chapter 2306, Texas Government Code.

(2) The designation and use of a Proposed Property described by Subchapter PP, Chapter 2306, Government Code that first began before September 1, 2021, is governed by the law in effect when the designation and use first began, and the former law is continued in effect for that purpose.

(3) A Political Subdivision that designated a property to be used by homeless individuals to Camp before September 1, 2021, may apply on or after that date for approval of a Plan pursuant to this section.

(4) A Political Subdivision that authorizes camping under the authority of §48.05(d)(1), (3) or (4), Texas Penal Code, are not required to submit a Plan for those instances.

(c) Definitions.

(1) Camp--Has the meaning assigned by Section 48.05 of the Texas Penal Code.

(2) Department--The Texas Department of Housing and Community Affairs.

(3) Plan--Specifically an application drafted by a Political Subdivision, submitted to the Department by the Political Subdivision, with the intention of meeting the requirements provided for in subsection (e) of this section (relating to Threshold Plan Requirements).

(4) Plan Determination Notice--The notification provided by the Department to the Political Subdivision stating a Plan's Approval or Denial.

(5) Political Subdivision--A local government as defined in Chapter 2306, Texas Government Code.

(6) Proposed New Campers--Homeless individuals that the Political Subdivision intends to allow to Camp at the Proposed Property for which a Plan is submitted.

(7) Proposed Property--That property proposed for use for Proposed New Campers and submitted in the Plan, owned, controlled, leased, or managed by the Political Subdivision.

(8) Public Park--Any parcel of land dedicated and used as parkland, or land owned by a political subdivision that is used for a park or recreational purpose that is under the control of the political subdivision, which is designated by the political subdivision.

(d) Plan Process.

(1) Submission.

(A) Plans may be submitted at any time. Plan resubmissions may also be submitted at any time.

(B) All Plans must be submitted electronically to campingplans@tdhca.texas.gov.

(C) At least one designated email address must be provided by the Political Subdivision; all communications from the Department to the Political Subdivision regarding the Plan will be sent to that email address. No communication will be sent by traditional postal delivery methods. Up to two email contacts may be provided.

(2) Review Process.

(A) Upon receipt, Department staff will send a confirmation email receipt to the designated email address and initiate review of the Plan. The Plan will be reviewed first to determine that all information specified in subsection (e) of this section (relating to Threshold Plan Requirements) have been included and that sufficient information has been provided by which to evaluate the Plan against the Plan Criteria provided for in subsection (f) of this section (relating to Plan Criteria).

(B) If a Plan as submitted does not sufficiently meet the requirements of §2306.1123, Texas Government Code, and subsection (e) of this section, or does not provide sufficient explanation by which to assess the Plan Criteria provided for in subsection (f) of this section, staff will issue the Political Subdivision a notice of deficiency. The Political Subdivision will have five calendar days to fully respond to all items requested in the deficiency notice.

(i) For a Political Subdivision that satisfies all requested deficiencies by the end of the five calendar day period, the review will proceed.

(ii) For a Political Subdivisions that does not satisfy all requested deficiencies by the end of the five calendar day period, no further review will occur. A Plan Determination Notice will be issued notifying the Political Subdivision that its Plan has been denied and stating the reason for the denial. The Political Subdivision may resubmit a Plan at any time after receiving a Plan Determination Notice.

(C) Plan Determination Notice.

(i) Upon completion of the review by staff, the Political Subdivision will be notified that its Plan has been Approved or Denied in a Plan Determination Notice.

(ii) Not later than the 30th day after the date the Department receives a plan or resubmitted Plan, the Department will make a final determination regarding approval of the Plan and send a Plan Determination Notice to the Political Subdivision. For a Political Subdivision that had a deficiency notice issued, and that satisfied all requested deficiencies by the end of the five calendar day period, the Department will strive to still issue a final determination notice by the 30th day from the date the Plan was originally received, however the date of issuance of the Plan Determination Notice may extend past the 30th day by the number of days taken by the Political Subdivision to resolve any deficiencies.

(iii) A Political Subdivision may appeal the decision in the Plan Determination Notice using the appeal process outlined in §1.7 of this chapter (relating to Appeals Process).

(D) Reasonable Accommodations may be requested from the Department as reflected in §1.1 of this subchapter (relating to Reasonable Accommodation Requests to the Department).

(e) Threshold Plan Requirements. A Plan submitted for approval to the Department must include all of the items described in paragraphs (1) - (8) of this subsection for the property for which the Plan is being submitted:

(1) pertinent contact information for the Political Subdivision as specified by the Department in its Plan template;

(2) the physical address or if there is no physical address the legal description of the property;

(3) the estimated number of Proposed New Campers to be located at the Proposed Property;

(4) a description with respect to the property of the five evaluative factors that addresses all of the requirements described in subparagraphs (A) - (E) of this paragraph:

(A) Local Health Care. Provide:

(i) A description of the availability of local health care for Proposed New Campers, including access to Medicaid services and mental health services;

(ii) A description of the specific providers of the local health care and mental health services available to Proposed New Campers. Local health/mental health care service providers do not include hospitals or other emergency medical assistance, but contemplate access to ongoing and routine health and mental health care. Providers of such services can include, but are not limited to: local health clinics, local mental health authorities, mobile clinics that have the location in their service area, and county indigent healthcare programs;

(iii) A description or copy of a communication from the Texas Department of Health and Human Services specific to the Political Subdivision and specific to the population of homeless individuals must be provided to establish the availability of access to Medicaid services;

(iv) A map or clear written description of the geographic proximity (in miles) of each of those providers to the Proposed Property;

(v) The cost of such care and services, whether those costs will be borne by the Proposed New Campers or an alternative source, and if an alternative source, then what that source is; and

(vi) A description of any limitations on eligibility that each or any of the providers may have in place that could preclude Proposed New Campers from receiving such care and services from the specific providers.

(B) Indigent Services. Provide:

(i) A description of the availability of indigent services for Proposed New Campers. For purposes of this factor, indigent services are any services that assist individuals or households in poverty with their access to basic human needs and supports. Indigent service providers include, but are not limited to: community action agencies, area agencies on aging, mobile indigent service providers that have the location in their service area; and local nonprofit or faith-based organizations providing such indigent services;

(ii) A description of the specific providers of the services and what services they provide;

(iii) A map or clear written description of the geographic proximity (in miles) of each of those providers to the Proposed Property; and

(iv) A description of any limitations on eligibility that each or any the providers may have in place that could preclude Proposed New Campers from receiving such services from the specific providers.

(C) Public Transportation. Provide:

(i) A description of the availability of reasonably affordable public transportation for Proposed New Campers. Reasonably affordable for the purposes of this Section means the rate for public transportation for the majority of users of that public transportation; if for instance the standard bus fare in an area is $2 per ride, then that rate is considered the reasonable affordable rate for the Proposed Property; Proposed New Campers should not have to pay a rate higher than that standard fare;

(ii) A description of the specific providers of the public transportation services and their prices;

(iii) A description of the closest proximity of the property to a specified entrance to a public transportation stop or station, with a sidewalk or an alternative pathway identified by the Political Subdivision for pedestrians, including a map of the closest stop and public transportation route shown in relation to the Proposed Property;

(iv) A description of the route schedule of the closest proximate public transportation route; and

(v) If public transportation is available upon demand at the property location, identification of any limitations on eligibility that each or any of the providers may have in place that could preclude Proposed New Campers from receiving such transportation services from that specific on-demand provider.

(D) Law Enforcement Resources. Provide:

(i) A description of the local law enforcement resources in the area;

(ii) The description should include a brief explanation of which local law enforcement patrol beat covers the Proposed Property;

(iii) A description of local law enforcement resources and local coverage in several other census tracts or law enforcement beats/areas with similar demographics to that of the beat/area of the Proposed Property to provide a comparative picture;

(iv) a description of any added resources for the area or proposed specifically for the property, and how proximate those resources are; and

(v) any explanation of reduced (or lower than typical of similar demographic areas) local law enforcement coverage in the area.

(E) Coordination with Local Mental Health Authority. Provide:

(i) a description of the steps the Political Subdivision has taken to coordinate with the Local Mental Health Authority to provide services for any Proposed New Campers; and

(ii) a description must include documentation of meetings or conversations, dates when they occurred, any coordination steps resulting from the conversations, and whether any ongoing coordination is intended for the Proposed Property.

(5) The Political Subdivision must provide evidence that establishes that the property is not a Public Park. Evidence must include documentation addressing the definition of a Public Park as defined in subsection (c)(8) of this section.

(6) Plans should be limited in length. Plans in excess of 15 pages of text, not including documentation and attachments, will not be reviewed.

(7) The Political Subdivision must include documentation that the site will include basic human sanitation services including toilets, sinks, and showers. Such facilities may be temporary fixtures such as portable or mobile toilets, sinks and showers.

(8) Any Plan that is a resubmission of a denied Plan, submitted again for the same Proposed Property, must include a short summary at the front of the Plan explaining what has been changed in the resubmitted Plan from the original denied Plan.

(f) Plan Criteria

(1) Approval. In no case will a Plan be approved if the Department has determined that the Proposed Property referenced in a Plan is a Public Park as defined in subsection (c)(6) of this section. Plans for other properties will be approved if the five factors are satisfied as described in subparagraphs (A) - (E) of this paragraph:

(A) Local health care, including access to Medicaid services (or other comparable health services) and mental health services, are within one mile of the Proposed Property, are accessible via pub-

lic transportation, can be provided on-site by qualified providers, or transportation is provided (which includes mobile clinics that have the location in their service area), and the Political Jurisdiction commits to a goal that such services are available at little, low or no cost for at least 50% Proposed New Campers (some limited exceptions from providers as may be described in accordance with subsection (d)(5)(A)(v) of this section will not preclude approval for this factor);

(B) There are indigent services providers that have locations within one mile of the Proposed Property, are accessible via public transportation, can provide services on-site, or transportation is provided (which includes mobile indigent service providers that have the location in their service area), and the Political Subdivision commits to a goal that such services are available for at least 50% of Proposed New Campers are expected to be eligible;

(C) The property is within 1/2 mile or less from a public transportation stop or station that has scheduled service at least several times per day for at least six days per week, or there is on demand public transportation available, and the Political Subdivision commits to a goal that at least 50% of the Proposed New Campers are eligible for that on-demand public transportation;

(D) The local law enforcement resources for the patrol zone or precinct that includes the Proposed Property are not materially less than those available in other zones or precincts of the local law enforcement entity, unless the Political Subdivision provides a specific plan for security in and around the property that the Political Subdivision has determined is appropriate for law enforcement services in that area; and

(E) the Political Subdivision has had at least one meeting to discuss initial steps and coordination with the Local Mental Health Authority, specific to this particular Proposed Property and the volume/service needs of Proposed New Campers.

(2) A Plan that meets at least four of the five factors in paragraph (1) of this subsection, may be approved if significant and sufficient mitigation is provided that delivers similarly comprehensive resources as required, to justify how the remaining factor not met will still be sufficiently addressed through some other means.

(3) Denial. An Application that does not meet all of the requirements in paragraph (1) of this subsection, or that does not meet the requirements of paragraph (2) of this subsection will be issued a Plan Determination Notice within 30 days of Plan application (which may be extended by the amount of calendar days the Political Subdivision took to respond to deficiencies) reflecting denial.

(g) Information Sharing. When the Department receives a complaint under §1.2 of this subchapter (relating to Department Complaint System to the Department) or information that a Political Subdivision is allowing camping by homeless individuals on a property that is not the subject of a Plan approved under this section, the Department will refer such information to the Office of the Attorney General, for possible action under Chapter 364, Local Government Code, or other law.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502366

Bobby Wilkinson
Executive Director
Texas Department of Housing and Community Affairs
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 475-3959

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TITLE 16. ECONOMIC REGULATION

PART 2. PUBLIC UTILITY COMMISSION OF TEXAS

CHAPTER 24. SUBSTANTIVE RULES APPLICABLE TO WATER AND SEWER SERVICE PROVIDERS

SUBCHAPTER F. CUSTOMER SERVICE AND PROTECTION

16 TAC §24.167

The Public Utility Commission of Texas (commission) proposes an amendment to 16 Texas Administrative Code (TAC) §24.167 (relating to Discontinuance of Service). Unedited §24.167 specifies "{p}ayment by check which has been rejected for insufficient funds …" which leaves other forms of payment unaddressed. Similarly, the tariff forms have a "returned check charge" line item, but do not specify what happens if a customer's credit card or debit card payment is declined. The proposal for publication removes the word "check" in reference to rejected payments to clarify that other forms of rejected payments are included.

Growth Impact Statement

The agency provides the following governmental growth impact statement for the proposed rule, as required by Texas Government Code §2001.0221. The agency has determined that for each year of the first five years that the proposed rule is in effect, the following statements will apply:

(1) the proposed rule will not create a government program and will not eliminate a government program;

(2) implementation of the proposed rule will not require the creation of new employee positions and will not require the elimination of existing employee positions;

(3) implementation of the proposed rule will not require an increase and will not require a decrease in future legislative appropriations to the agency;

(4) the proposed rule will not require an increase and will not require a decrease in fees paid to the agency;

(5) the proposed rule will not, in effect, create a new regulation, because it is replacing a similar regulation;

(6) the proposed rule will not repeal an existing regulation;

(7) the same number of individuals will be subject to the proposed rule's applicability as were subject to the applicability of the rule it is being proposed to replace; and

(8) the proposed rule will not affect this state's economy.

Fiscal Impact on Small and Micro-Businesses and Rural Communities

There is no adverse economic effect anticipated for small businesses, micro-businesses, or rural communities as a result of implementing the proposed rule. Accordingly, no economic impact statement or regulatory flexibility analysis is required under Texas Government Code §2006.002(c).

Takings Impact Analysis

The commission has determined that the proposed rule will not be a taking of private property as defined in chapter 2007 of the Texas Government Code.

Fiscal Impact on State and Local Government

Celia Eaves, Utility Outreach Administrator, has determined that for the first five-year period the proposed rule is in effect, there will be no fiscal implications for the state or for units of local government under Texas Government Code §2001.024(a)(4) as a result of enforcing or administering the section.

Public Benefits

Ms. Eaves has determined that for each year of the first five years the proposed section is in effect the public benefit anticipated as a result of enforcing the section is clarity on the types of permitted payment methods and rejected payments. There will be no adverse economic effect on small businesses or micro-businesses as a result of enforcing this section. Ms. Eaves has determined that the economic costs to persons required to comply with the proposed rule will vary on an individual basis.

Local Employment Impact Statement

For each year of the first five years the proposed section is in effect, there should be no effect on a local economy; therefore, no local employment impact statement is required under Texas Government Code §2001.022.

Costs to Regulated Persons

Texas Government Code §2001.0045(b) does not apply to this rulemaking because the commission is expressly excluded under subsection §2001.0045(c)(7).

Public Hearing

The commission staff will conduct a public hearing on this rulemaking if requested in accordance with Texas Government Code §2001.029. The request for a public hearing must be received by August 22, 2025.

Public Comments

Interested persons may file comments electronically through the interchange on the commission's website. Comments must be filed by August 22, 2025. Comments should be organized in a manner consistent with the organization of the proposed rule. The commission invites specific comments regarding the costs associated with, and benefits that will be gained by, implementation of the proposed rule. The commission will consider the costs and benefits in deciding whether to modify the proposed rule on adoption. All comments should refer to Project Number 58270.

Each set of comments should include a standalone executive summary as the last page of the filing. This executive summary must be clearly labeled with the submitting entity's name and should include a bulleted list covering each substantive recommendation made in the comments.

Statutory Authority

The amendment is proposed under Texas Water Code (TWC) §13.001, which provides the commission jurisdiction over a water and sewer utility; §13.004, which provides the commission with jurisdiction over certain water supply or sewer service corporations; §13.041(b), which provides the commission with the authority to make and enforce rules reasonably required in the exercise of its powers and jurisdiction.

Cross reference to statutes: Texas Water Code §13.001, 13.004, and 13.041(b).

§24.167. Discontinuance of Service.

(a) Disconnection with notice.

(1) (No change.)

(2) Reasons for disconnection. Utility service may be disconnected after proper notice for any of the following reasons:

(A) failure to pay a delinquent account for utility service or failure to comply with the terms of a deferred payment agreement.

(i) Payment [~~by check~~] which has been rejected for insufficient funds, closed account, or for which a stop payment order has been issued is not deemed to be payment to the utility.

(ii) - (iii) (No change.)

(B) - (F) (No change.)

(b) - (h) (No change.)

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502321
Adriana Gonzales
Rules Coordinator
Public Utility Commission of Texas
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 936-7322

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CHAPTER 25. SUBSTANTIVE RULES APPLICABLE TO ELECTRIC SERVICE PROVIDERS

SUBCHAPTER J. COSTS, RATES AND TARIFFS

DIVISION 1. RETAIL RATES

16 TAC §§25.235 - 25.237

The Public Utility Commission of Texas (commission) proposes amendments to 16 Texas Administrative Code (TAC) §25.235 (relating to Fuel Costs-General), §25.236 (relating to Recovery of Fuel Costs), and §25.237 (relating to Fuel Factors.

The proposed amendments will implement Public Utility Regulatory Act (PURA) §36.203 as revised by House Bill (HB) 2073 during the Texas 88th Regular Legislative Session. The amended rules will make procedural changes to fuel factor proceedings used by non-ERCOT utilities and create an interim fuel adjustment process for those utilities and reduce the maximum time period covered by fuel reconciliations from three years to two

years. Additional changes include revisions to notice requirements for fuel proceedings and the addition of a protest procedure in which certain entities can challenge an interim fuel adjustment or fuel factor. The proposed amendments also update the commission-prescribed fuel reconciliation filing package to conform with current electronic filing practice, revise or remove outdated terms, and require utilities to provide copies of monthly fuel cost report the utility filed in the past 24-month period covered by the fuel reconciliation. The proposed amendments will also amend the title of 16 TAC §25.235 to 16 TAC §25.235, relating to Fuel Costs.

Growth Impact Statement

The agency provides the following governmental growth impact statement for the proposed rule, as required by Texas Government Code §2001.0221. The agency has determined that for each year of the first five years that the proposed rules are in effect, the following statements will apply:

(1) the proposed rules will not create a government program and will not eliminate a government program;

(2) implementation of the proposed rules will not require the creation of new employee positions and will not require the elimination of existing employee positions;

(3) implementation of the proposed rules will not require an increase and will not require a decrease in future legislative appropriations to the agency;

(4) the proposed rules will not require an increase and will not require a decrease in fees paid to the agency;

(5) the proposed rules will not create a new regulation;

(6) the proposed rules will expand, limit, or repeal an existing regulation;

(7) the proposed rules will not change the number of individuals subject to the rule's applicability; and

(8) the proposed rules will not affect this state's economy.

Fiscal Impact on Small and Micro-Businesses and Rural Communities

There is no adverse economic effect anticipated for small businesses, micro-businesses, or rural communities as a result of implementing the proposed rule. Accordingly, no economic impact statement or regulatory flexibility analysis is required under Texas Government Code §2006.002(c).

Takings Impact Analysis

The commission has determined that the proposed rules will not be a taking of private property as defined in chapter 2007 of the Texas Government Code.

Fiscal Impact on State and Local Government

Ana Givens, Director, Financial Review, has determined that for the first five-year period the proposed rules are in effect, there will be no fiscal implications for the state or for units of local government under Texas Government Code §2001.024(a)(4) as a result of enforcing or administering the sections.

Public Benefits

Ms. Givens has determined that for each year of the first five years the proposed sections are in effect the public benefit anticipated as a result of enforcing the sections will be expedited processes to ensure more timely cost recovery for non-ERCOT utilities. There will not be any probable economic costs to persons required to comply with the rules under Texas Government Code §2001.024(a)(5).

Local Employment Impact Statement

For each year of the first five years the proposed sections are in effect, there should be no effect on a local economy; therefore, no local employment impact statement is required under Texas Government Code §2001.022.

Costs to Regulated Persons

Texas Government Code §2001.0045(b) does not apply to this rulemaking because the commission is expressly excluded under subsection §2001.0045(c)(7).

Public Hearing

The commission will conduct a public hearing on this rulemaking if requested in accordance with Texas Government Code §2001.029. The request for a public hearing must be received by August 26, 2025. If a request for public hearing is received, commission staff will file in this project a notice of hearing.

Public Comments

Interested persons may file comments electronically through the interchange on the commission's website. Comments must be filed by August 26, 2025. Comments should be organized in a manner consistent with the organization of the proposed rules and questions for comment. The commission invites specific comments regarding the effects of the proposed rule, including the costs associated with, and benefits that will be gained by, implementation of the proposed rule. The commission also requests any data, research, or analysis from any person required to comply with the proposed rules or any other interested person. The commission will consider the information submitted by commenters and the costs and benefits of implementation in deciding whether to modify the proposed rules on adoption. All comments should refer to Project Number 58210.

Each set of comments should include a standalone executive summary as the last page of the filing. This executive summary must be clearly labeled with the submitting entity's name and should include a bulleted list covering each substantive recommendation made in the comments.

In addition to comments on the proposed rule text, the commission requests comments on the following questions concerning the proposed rules and the new procedures established by HB 2073 (88R):

Existing §25.236(a)(9) authorizes a utility to retain 10% of the margins from an off-system energy sales transaction if certain criteria are met.

1. Should this percentage be adjusted? Why or why not?

2. Should the provision be revised to distinguish separate margins (expressed as a percentage) that an electric utility may retain from off-system sales that are respectively applicable to electric utilities that are dispatched in a power market operated by an independent system operator (ISO) outside of ERCOT and those that are not? (i.e., An electric utility being dispatched by an outside-ERCOT ISO may retain X% of margins from off-system sales, an electric utility that is not dispatched by an outside-ERCOT ISO may retain Y% of margins from off-system sales.)

PURA §36.203(b)(3)(A) requires commission rules to ensure any material balance of amounts under-collected or over-collected for eligible electric fuel and purchased power costs is refunded or surcharged to customers through an interim fuel adjustment not later than the 90th day after the date the balance is accrued unless an exception applies.

3. What is the proper threshold for determining a "material balance" for purposes of an interim fuel adjustment? (The proposed rule contains a 4.0% materiality threshold identical to the threshold used in §25.237 for fuel factors.)

4. Given the 90-day deadline for recovery under §36.203(b)(3)(A), what time period is appropriate to reasonably expect an electric utility to be capable of filing an interim fuel adjustment application? (i.e., Taking into account the time necessary for a utility to close their books and make a true-up determination regarding whether deferred fuel balances places the utility in a state of material over- or under-recovery.)

5. At what point does a utility determine that it incurs ("accrues") a fuel balance for purposes of an interim fuel adjustment? (i.e., Given the lag time in providing monthly fuel reports to the commission and based on a utility's accounting practices, what is the method for determining when a material under-recovery or over-recovery has accrued?)

6. Given the introduction of the interim fuel adjustment by HB 2073 (88R), should §25.237(f), which concerns emergency revisions to a fuel factor, be deleted or revised? (i.e., Does an interim fuel adjustment eliminate the need for emergency revisions to the fuel factor?)

PURA §36.203(e) authorizes a customer of the electric utility, a municipality with original jurisdiction over the utility, or Office of Public Utility Counsel (OPUC) to "protest" a fuel factor or interim fuel adjustment. The statute establishes several limitations on such protests, such as the prohibition on prudence of costs being raised as an issue, not requiring a hearing per PURA §36.203(d) unless one of the criteria of PURA §36.203(g) are met, and the additional restrictions on fuel factor protests under PURA §36.203(f).

7. Procedurally, how should a "protest" of a fuel factor or interim fuel adjustment be treated at the commission given the foregoing statutory limitations? Under HB 2073, a person that files a "protest" in the context of a fuel factor or interim fuel adjustment could be classified as a more constrained form of "intervenor" in the proceeding under commission rules. Specifically, an "intervenor" as defined in 16 TAC §22.2(25), relating to Definitions is a party to the proceeding and may accordingly, per 16 TAC §22.102(b), relating to Classification of Parties, "have the right to present a direct case, cross-examine all witnesses, conduct discovery, make oral or written legal arguments, and otherwise fully participate in any proceeding." This contrasts with the far more limited "protestor" defined in 16 TAC §22.2(37) that is not a party to the case and may only submit oral or written comments if allowed by the presiding officer per 16 TAC §22.102(c)). However, given the foregoing statutory boundaries on protests of fuel factors and interim fuel adjustments and the requirement that, for interim fuel adjustments, a material balance be collected from or refunded to customers no later than the 90th day after the date the balance accrues. In the context of these proceedings, consider the following questions.

a. Is a protest in fuel factor proceeding or of an interim fuel adjustment meant to equate to a motion to intervene? Or should filing a protest mean that the person is automatically a party to the (assuming that person is a customer of the electric utility, a municipality with original jurisdiction over the utility, or OPUC)?

b. What rights should a person that files a "protest" in a fuel factor proceeding or an in interim fuel adjustment have? (i.e., right to present a direct case, cross-examine witnesses, conduct discovery, etc.)

c. Given the time constraints surrounding refunds or collections, should the rights afforded to a person that files a "protest" in an interim fuel adjustment be different than those afforded to a person that files a "protest" in a fuel factor proceeding?

d. Should an interim fuel adjustment be eligible for administrative approval under 16 TAC §22.32, relating to Administrative Review, regardless of whether a protest is filed? (Assuming no hearing is required under PURA §36.203(g) and the commission does not otherwise deem a hearing to be necessary).

8. Please provide any additional feedback regarding the statutory deadlines and commission procedures surrounding fuel factor proceedings and interim fuel adjustments.

Statutory Authority

The amendments are proposed under Public Utility Regulatory Act (PURA) §14.001, which grants the commission the general power to regulate and supervise the business of each public utility within its jurisdiction and to do anything specifically designated or implied by this title that is necessary and convenient to the exercise of that power and jurisdiction; §14.002, which authorizes the commission to adopt and enforce rules reasonably required in the exercise of its powers and jurisdiction; PURA §14.052, which requires the commission to adopt and enforce rules governing practice and procedure before the commission and, as applicable, practice and procedure before the State Office of Administrative Hearings; PURA §36.201 which, outside of certain circumstances, prohibits the commission from establishing a rate or tariff that authorizes an electric utility to automatically adjust and pass through to the utility's customers a change in the utility's fuel or other costs; PURA §36.203 which authorizes the commission to establish a utility's fuel factor and adjust that fuel factor through an interim fuel adjustment.

Cross Reference to Statute: Public Utility Regulatory Act §14.001, 14.002, 14.052, 36.201, and 36.203.

§25.235. Fuel Costs[~~--General~~].

(a) Purpose. The commission will set an electric utility's rates at a level that will permit the electric utility a reasonable opportunity to earn a reasonable return on its invested capital and to recover its reasonable and necessary expenses, including the cost of fuel and purchased power. The commission recognizes in this connection that it is in the interests of both electric utilities and their ratepayers to adjust charges in a timely manner to account for changes in certain fuel and purchased-power costs. In accordance with [~~Pursuant to the~~] Public Utility Regulatory Act (PURA) §36.203 this section establishes a procedure for setting and revising fuel factors and a procedure for regularly reviewing the reasonableness of the fuel expenses recovered through fuel factors.

(b) Notice of fuel proceedings. In addition to the notice required by the Administrative Procedure Act (APA) to be given by the commission, the electric utility is required to give notice of a fuel proceeding at the time the petition is filed. The term "rate class" as used in this subsection means all customers taking service under the same tariffed rate or schedule, or a group of seasonal agricultural customers as identified by the electric utility.

(1) Method of notice. Notice of fuel proceedings must be posted to the utility's website and provided to the OPUC by electronic mail. Notice must also be provided [~~will be given~~] by the electric utility as follows, as applicable:

(A) Notice in all proceedings involving refunds or [~~,~~] surcharges (interim fuel adjustments), or a proposal to change the fuel factor under §25.237 of this title (relating to Fuel Factor), must [~~shall~~] be by either:

(i) one-time publication in a newspaper having general circulation in each county of the service area of the electric utility; or

(ii) by individual notice to each customer, and by individual notice to all parties [~~that participated~~] in the electric utility's prior fuel reconciliation proceeding.[~~;~~]

(B) Notice in all fuel reconciliation proceedings must [~~shall~~] be by:

(i) publication once each week for two consecutive weeks in a newspaper having general circulation in each county of the service area of the electric utility; and

(ii) by individual notice to each customer and to all parties [~~that participated~~] in the electric utility's prior fuel reconciliation proceeding.

(2) Contents of notice.

(A) All notices required by this section must [~~shall~~] provide the following information:

(i) the date the petition or application was filed;

(ii) a general description of the customers, customer classes (for fuel factors) or rate classes (for interim fuel adjustments), and territories affected by the petition or application;

(iii) the relief requested;

(iv) a statement substantially similar to the following: [~~the statement,~~] "Persons with questions or who want more information on this petition or application may contact (utility name) at (utility address) or call (utility toll-free telephone number) during normal business hours. A complete copy of this petition or application is available for inspection at the address listed above or at the following website [direct link to notice on the utility's website]"; and

(v) a statement substantially similar to the following: [~~the statement,~~] "Persons who wish to formally participate in this proceeding, or who wish to express their comments concerning this petition or application should contact the Public Utility Commission of Texas, Consumer Protection Division [~~Office of Customer Protection~~], P.O. Box 13326, Austin, Texas 78711-3326, or call (512) 936-7120 or toll-free at (888) 782-8477. Hearing and speech-impaired individuals may contact the commission through [~~with text telephones (TTY) may call (512) 936-7136 or use~~] Relay Texas (toll-free) at 1-800-735-2989."

(B) (No change.)

(C) Notices to revise fuel factors or an interim fuel adjustment for a refund or surcharge [~~, to refund, or to surcharge~~] must contain a statement substantially similar to the following: [~~the statement that,~~] "these changes will be subject to final review by the commission in the electric utility's next reconciliation," unless, in the case of refunds or surcharges, the change is a result of a reconciliation proceeding.

(D) Notices to reconcile fuel expenses must also state the period for which final reconciliation is sought.

(E) Notices for an interim fuel adjustment must indicate, for each rate class:

(i) whether the adjustment is for a refund or surcharge;

(ii) the amount of the refund or surcharge;

(iii) the period for which the refund or surcharge is applicable (i.e., January to March);

(iv) if the adjustment is for a surcharge, whether the surcharge would or is anticipated to result in a total bill increase of 10 percent or more for an average customer in any rate class compared to the total bill in the month before implementation; and

(v) the time period and manner in which the surcharge or refund will be implemented.

[~~(3) Proof of notice may be demonstrated by appropriate affidavit. In fuel proceedings initiated by a person other than an electric utility, the notice required in this subsection must be provided in accordance with a schedule ordered by the presiding officer.~~]

(c) Reports; confidentiality of information. Matters related to submitting reports and confidential information will be handled as follows:

(1) The commission will monitor each electric utility's actual and projected fuel-related costs and revenues on a monthly basis. Each electric utility must [~~shall~~] maintain and provide to the commission, in a format specified by the commission, monthly reports containing all information required to monitor monthly fuel-related costs and revenues, including generation mix, fuel consumption, fuel costs, purchased power quantities and costs, and system and off-system sales revenues.

(2) (No change.)

(3) The electric utility must [~~shall~~] prepare a confidentiality disclosure agreement to be included as part of the fuel reconciliation petition. The format for the agreement must [~~shall~~] be the same as that contained in the commission approved rate filing package. In addition to the agreement itself, Attachment 1 of the agreement must [~~shall~~] present a complete listing of the information required to be filed which the electric utility alleges is confidential. Upon request and execution of the confidentiality agreement, the electric utility must [~~shall~~] provide any information which it alleges is confidential. If the electric utility fails to file a confidentiality agreement, the deadline for a commission final order in the case is tolled until a protective order is entered or a confidentiality agreement is filed. Use of the confidentiality disclosure agreement does not constitute a finding that any information is proprietary and/or confidential under law, or alter the burden of proof on that issue. The form of agreement contained in the commission approved rate filing package does not bind the examiner or the commission to accept the language of the agreement in the consideration of any subsequent protective order that may be entered.

(4) (No change.)

§25.236. Recovery of Fuel Costs.

(a) Eligible fuel expenses. Eligible fuel expenses include expenses properly recorded in the Federal Energy Regulatory Commission Uniform System of Accounts, numbers 501, 502, 503, 509, 518, 536, 547, and 555, as modified in this subsection, as of April 1, 2025 [~~2013~~], and the items specified in paragraph (8) of this subsection. Any later amendments to the System of Accounts are not incorporated into this subsection. Subject to the commission finding special circumstances under paragraph (7) of this subsection, eligible fuel expenses are limited to:

(1) - (6) (No change.)

(7) Upon demonstration that such treatment is justified by special circumstances, an electric utility may recover as eligible fuel expenses fuel or fuel related expenses otherwise excluded in paragraphs (1) - (6) of this subsection. In determining whether special circumstances exist, the commission will [~~shall~~] consider, in addition to other factors developed in the record of the reconciliation proceeding, whether the fuel expense or transaction giving rise to the ineligible fuel expense resulted in, or is reasonably expected to result in, increased reliability of supply or lower fuel expenses than would otherwise be the case, and that such benefits received or expected to be received by ratepayers exceed the costs that ratepayers otherwise would have paid or otherwise would reasonably expect to pay.

(8) Eligible fuel expenses are prohibited from being [~~shall not be~~] offset by revenues by affiliated companies for the purpose of equalizing or balancing the financial responsibility of differing levels of investment and operation costs associated with transmission assets. In addition to the expenses designated in paragraphs (1) - (7) of this subsection, unless otherwise specified by the commission, eligible fuel expenses may [~~shall~~] be offset by:

(A) revenues from steam sales included in Accounts 504 and 456 to the extent expenses incurred to produce that steam are included in Account 503;

(B) revenues from off-system sales in their entirety, except as permitted in paragraph (9) of this subsection; and

(C) revenues from disposition of allowances properly recorded in Account 411.8.

(9) (No change.)

(b) Definitions. The following terms, when used in this section, have the following meanings unless the context indicates otherwise.

(1) Materially or material--the cumulative amount of over- or under-recovery, including interest, is greater than or equal to 4.0% of the annual actual fuel cost figures on a rolling 12-month basis, as reflected in the utility's monthly fuel cost reports as filed by the utility with the commission.

(2) Rate class--all customers taking service under the same tariffed rate or schedule, or a group of seasonal agricultural customers as identified by the electric utility.

(c) Reconciliation of fuel expenses.

(1) Each electric utility must file petitions for reconciliations on a periodic basis such that a petition:

(A) contains at least one year and no more than two years of reconcilable data; and

(B) is filed no later than 180 days after the end of the period to be reconciled.

(2) To the extent a reconciliation results in a material change to the electric utility's under-collected or over-collected fuel balance, that change may be incorporated into an interim fuel adjustment under subsection (f) of this section as directed by the commission through the issuance of a written order.

[~~(b) Reconciliation of fuel expenses. Electric utilities shall file petitions for reconciliation on a periodic basis so that any petition for reconciliation shall contain a maximum of three years and a minimum of one year of reconcilable data and will be filed no later than six months after the end of the period to be reconciled.~~]

(d) [~~(c)~~] Petitions to reconcile fuel expenses. In addition to the commission prescribed reconciliation application, a fuel reconciliation petition filed by an electric utility must be accompanied by a summary and supporting testimony that includes the following information:

(1) a summary of significant, atypical events that occurred during the reconciliation period that affected the economic dispatch of the electric utility's generating units, including but not limited to transmission line constraints, fuel use or deliverability constraints, unit operational constraints, and system reliability constraints;

(2) a general description of typical constraints that limit the economic dispatch of the electric utility's generating units, including but not limited to transmission line constraints, fuel use or deliverability constraints, unit operational constraints, and system reliability constraints;

(3) the reasonableness and necessity of the electric utility's eligible fuel expenses and its mix of fuel used during the reconciliation period;

(4) a summary table that lists all the fuel cost elements which are covered in the electric utility's fuel cost recovery request, the dollars associated with each item, and where to find the item in the prefiled testimony;

(5) tables and graphs which show generation (MWh), capacity factor, fuel cost (cents per kWh and cents per MMBtu), variable cost and heat rate by plant and fuel type, on a monthly basis; and

(6) a summary and narrative of the next-day and intra-day surveys of the electricity markets and a comparison of those surveys to the electric utility's marginal generating costs.

(e) [~~(d)~~] Fuel reconciliation proceedings. The burden [~~Burden~~] of proof and scope of a fuel reconciliation proceeding are as follows:

(1) In a proceeding to reconcile fuel factor revenues and expenses, an electric utility has the burden of proving [~~showing~~] that:

(A) its eligible fuel expenses during the reconciliation period were reasonable and necessary expenses incurred to provide reliable electric service to retail customers;

(B) if its eligible fuel expenses for the reconciliation period included an item or class of items supplied by an affiliate of the electric utility, the prices charged by the supplying affiliate to the electric utility were reasonable and necessary and no higher than the prices charged by the supplying affiliate to its other affiliates or divisions or to unaffiliated persons or corporations for the same item or class of items; and

(C) it has properly accounted for the amount of fuel-related revenues collected in accordance with [~~pursuant to~~] the fuel factor during the reconciliation period.

(2) The scope of a fuel reconciliation proceeding includes any issue related to determining the reasonableness of the electric utility's fuel expenses during the reconciliation period and reviewing whether the electric utility has materially over- or under-recovered its reasonable fuel expenses through interim fuel adjustments under subsection (f) of this section. An electric utility has the burden of proof in a fuel reconciliation proceeding to establish the reasonableness of its fuel expenses and the materiality of any over- or under-recovery.

(f) Interim fuel adjustments. An electric utility must apply for an interim fuel adjustment in the time frame specified by subsection (i)(2)(A) of this section if the utility is in a state of material under-collection or over-collection of the utility's reasonably stated eligible fuel and purchased power costs.

(1) Adjustment factor. If it is determined in the interim fuel adjustment proceeding that the utility is in a state of material under-collection or over-collection, except as provided for under subsection (g)(7) of this section, each rate class must be credited or assessed a refund or surcharge, as applicable, using an adjustment factor. The adjustment factor will be applied to the kilowatt-hour usage of each rate class over the refund or surcharge period.

(A) The adjustment factor will, for the applicable period be determined by dividing the amount of refund or surcharge properly allocated to each rate class by projected kilowatt-hour usage for the applicable rate class during the period in which the refund or surcharge will be made.

(B) Notwithstanding subparagraph (A) of this paragraph, each retail customer who receives service at transmission voltage levels, each wholesale customer, and any groups of seasonal agricultural customers as identified by the electric utility must be given a one-time credit or assessed a surcharge made on a monthly basis over a period not to exceed 12 months through a bill charge, based on the actual refund or surcharge balance for the individual customers.

(2) Refunds and surcharges. Refunds and surcharges must be issued and recovered by the electric utility, as applicable, in the following manner for each rate class:

(A) All refunds must be made through a bill credit and be issued no later than 90 days the refund balance is accrued. A refund may be made by check to a municipally-owned utility if requested by that utility.

(B) All surcharges must be assessed on a monthly basis and paid by customers no later than 90 days from the date the surcharge balance is accrued except in the following circumstances:

(i) If an interim fuel adjustment would or is anticipated to result in a total bill increase of 10 percent or more for an average customer in any rate class compared to the total bill in the month before implementation, the surcharge must be collected over a time period ending not later than a date ordered by the commission. Such a time period must be at least 90 days after the date the balance is accrued.

(ii) If the commission determines that a utility has an under-collected balance that is the result of extraordinary electric fuel and purchased power costs that are unlikely to continue, the commission may approve a surcharge in an interim fuel adjustment proceeding that would defer recovery to occur over a period exceeding 90 days from the date the surcharge balance is accrued.

(3) The prudence of costs will not be considered in an interim fuel adjustment. The prudence of costs may only be reviewed in a fuel reconciliation proceeding under subsection (e) of this section or another appropriate proceeding.

[(e) Refunds. All fuel refunds and surcharges shall be made using the following methods.]

[(1) Interest shall be calculated on the cumulative monthly ending under- or over-recovery balance at the rate established annually by the commission for overbilling and underbilling in §25.28 (e) and (d) of this title (relating to Bill Payment and Adjustments). Interest shall be calculated based on principles set out in subparagraphs (A)-(E) of this paragraph.]

[(A) Interest shall be compounded annually by using an effective monthly interest factor.]

[(B) The effective monthly interest factor shall be determined by using the algebraic calculation $x = (1 + i)^{(1/12)} - 1$; where i = commission-approved annual interest rate, and x = effective monthly interest factor.]

[(C) Interest shall accrue monthly. The monthly interest amount shall be calculated by applying the effective monthly interest factor to the previous month's ending cumulative under/over recovery fuel and interest balance.]

[(D) The monthly interest amount shall be added to the cumulative principal and interest under/over recovery balance.]

[(E) Interest shall be calculated through the end of the month of the refund or surcharge.]

[(2) Rate class as used in this subparagraph shall mean all customers taking service under the same tariffed rate schedule, or a group of seasonal agricultural customers as identified by the electric utility.]

(g) Interest calculations for fuel proceedings.

(1) For a fuel proceeding under subsection (e) or (f) of this section, interest must be calculated for each rate class on the cumulative monthly ending under- or over-recovery balance for that rate class at the rate established annually by the commission for overbilling and underbilling in §25.28(c) and (d) of this title (relating to Bill Payment and Adjustments). Interest must be calculated for each rate class based on principles set out in subparagraphs (A) - (E) of this paragraph:

(A) Interest must be compounded by using an effective monthly interest factor.

(B) The effective monthly interest factor must be determined by using the algebraic calculation $x = (1 + i)^{(1/12)} - 1$; where i = commission-approved annual interest rate, and x = effective monthly interest factor.

(C) Interest accrues on a monthly basis. The monthly interest amount is calculated by applying the effective monthly interest factor to the previous month's ending cumulative under- or over-recovery balance.

(D) The monthly interest amount must be added to the cumulative principal and interest under- or over-recovery balance.

(E) In calculating the amounts to be refunded or surcharged, interest must be calculated through the end of the month of the refund or surcharge.

(2) [(3)] Unless otherwise ordered by the commission in an electric utility's fuel reconciliation proceeding, in calculating rate class fuel balances, the total of the utility's eligible electric fuel and purchased power costs for a calendar month must be allocated among jurisdictions based on the actual historical calendar month kilowatt-hour usage, adjusted for line losses using the same commission-approved loss factors that were used in the electric utility's applicable fixed or interim fuel factor. The resulting monthly Texas retail jurisdiction costs must be allocated among rate classes based on the actual historical calendar month kilowatt-hour usage, [Interclass allocations of refunds and surcharges, including associated interest, shall be developed on a month-by-month basis and shall be based on the historical kilowatt-hour usage of each rate class for each month during the period in which the cumulative under- or over-recovery occurred,] adjusted for line losses using the same commission-approved loss factors that were used in the electric utility's applicable fixed or interim fuel factor.

(3) [(4)] Intraclass allocations of refunds and surcharges [shall] depend on the voltage level at which the customer receives service from the electric utility. Retail customers who receive service at transmission voltage levels, all wholesale customers, and any groups of seasonal agricultural customers as identified by the electric utility must

[~~shall~~] be given refunds or assessed surcharges based on their individual actual historical kilowatt-hour usage recorded during each month of the period in which the cumulative under- or over-recovery occurred, adjusted for line losses where [~~if~~] necessary. All other customers must [~~shall~~] be given refunds or assessed surcharges based on the historical kilowatt-hour usage of their rate class.

[~~(5) Unless otherwise ordered by the commission, all refunds shall be made through a one-time bill credit and all surcharges shall be made on a monthly basis over a period not to exceed 12 months through a bill charge. However, refunds may be made by check to municipally-owned electric utility systems if so requested. Retail customers who receive service at transmission voltage levels, all wholesale customers, and any groups of seasonal agricultural customers as identified by the electric utility shall be given a one-time credit or assessed a surcharge made on a monthly basis over a period not to exceed 12 months through a bill charge. All other customers shall be given a credit or assessed a surcharge based on a factor which will be applied to their kilowatt-hour usage over the refund or surcharge period. This factor will be determined by dividing the amount of refund or surcharge allocated to each rate class by forecasted kilowatt-hour usage for the class during the period in which the refund or surcharge will be made.~~]

[~~(6) A petition to surcharge or refund a fuel under- or over-recovery balance not associated with a proceeding under subsection (d) of this section shall be processed in accordance with the filing schedules in §25.237(d) of this title (relating to Fuel factors) and the deadlines in §25.237(e) of this title.~~]

(i) [~~(f)~~] Procedural schedule.

(1) Procedural schedule for fuel reconciliation proceedings. Upon the filing of a petition to reconcile fuel expenses [~~in a separate proceeding~~], the presiding officer will [~~officers shall~~] set a procedural schedule that will enable the commission to issue a final order in the proceeding within one year after a materially complete petition was filed. However, if two or more [~~the deadlines result in a number of~~] electric utilities file petitions to reconcile fuel expenses [~~filing cases~~] within 45 days of each other, the presiding officers will [~~shall~~] schedule the cases in a manner to allow the commission to accommodate the workload of the cases irrespective of whether the [~~such~~] procedural schedule enables the commission to issue a final order in each of the cases within one year after a materially complete petition is filed.

(2) Procedural schedule for interim fuel adjustments.

(A) A utility seeking an interim fuel adjustment to surcharge or refund a fuel under- or over-recovery balance must file its interim fuel adjustment application within five working days from the date the material fuel under- or over-recovery balance accrues.

(B) Upon the filing of a petition for an interim fuel adjustment to surcharge or refund a material fuel under- or over-recovery balance, the presiding officer will set a procedural schedule that will enable the commission to issue a final order in the proceeding no later than 75 days from the date the surcharge or refund balance is accrued.

(C) Notwithstanding subparagraph (B) of this paragraph, a final order for an interim fuel adjustment may be issued later than 75 days from the date a surcharge balance is accrued if:

(i) the presiding officer determines that the interim fuel adjustment sought would result in a total bill increase of 10 percent or more for an average customer in any rate class as described under subsection (f)(2)(B)(i) of this section or if the utility has a material under-collected balance that is the result of extraordinary electric fuel and purchased power costs as described under subsection (f)(2)(B)(ii) of this section; or

(ii) a hearing is required for a protest of an interim fuel adjustment under subsection (h) of this section.

(3) Procedural schedule for protest of interim fuel adjustment. A protest of an interim fuel adjustment may be processed and reviewed in a manner deemed administratively efficient by the presiding officer to ensure that any refunds or surcharges are refunded or collected in accordance with the deadline established under subsection (f) of this section, as applicable.

§25.237. Fuel Factors.

(a) Use and calculation of fuel factors. An electric utility's fuel costs will be recovered from the electric utility's customers by the use of a fuel factor that will be charged for each kilowatt-hour (kWh) consumed by the customer.

(1) An electric utility may determine its fuel factor in dollars per kilowatt-hour in accordance with [~~pursuant to~~] either subparagraph (A) or (B) of this paragraph. Fuel factors must account for system losses and for the difference in line losses corresponding to the voltage at which the electric service is provided. An electric utility may have different fuel factors for different times of the year to account for seasonal variations. A different method of calculation may be allowed upon a showing of good cause by the electric utility.

(A) - (B) (No change.)

(2) An electric utility may initiate a change to its fuel factor as follows:

(A) In accordance with [~~Pursuant to~~] subsection (a)(1)(A) of this section, an electric utility may petition to adjust its fuel factor as often as once every four months according to the schedule set out in subsection (d) of this section.

(B) In accordance with [~~Pursuant to~~] subsection (a)(1)(B) of this section, an electric utility may petition to adjust its fuel factor in accordance with its approved fuel factor formula no sooner than four months after the filing of its most recent fuel factor adjustment petition.

(C) - (D) (No change.)

(3) Fuel factors are temporary rates, and the electric utility's collection of revenues by fuel factors is subject to the following adjustments:

(A) The reasonableness of the fuel costs that an electric utility has incurred will be periodically reviewed in a reconciliation proceeding, as described in §25.236 of this title, and any disallowed costs resulting from a reconciliation proceeding will be reflected in the calculation of the utility's recoverable fuel and over- or under- [~~over/(under)~~] collections.

(B) To the extent that there are variations between the fuel costs incurred and the revenues collected, it may be necessary [~~or convenient~~] to refund material over-collections [~~overcollections~~] or surcharge material under-collections through an interim fuel adjustment under §25.236 of this title in the time and manner required by that section [~~surcharge undercollections~~]. Refunds or surcharges may be made without changing an electric utility's fuel factor. [~~Nothwithstanding §25.236(e)(6) of this title, an electric utility may petition for a surcharge any time it has materially undercollected its fuel costs and projects that it will continue to be in a state of material undercollection. Notwithstanding §25.236(e)(6) of this title, an electric utility shall petition to make a refund any time it has materially overcollected its fuel costs and projects that it will continue to be in a state of material overcollection.~~]

(C) The terms "materially" ["~~Materially~~"] or "material," as used in this section, mean [~~shall mean~~] that the cumulative amount of over- or under-recovery, including interest, is greater than or equal to 4.0% of the annual actual fuel cost figures on a rolling 12-month basis, as reflected in the utility's monthly fuel cost reports as filed by the utility with the commission.

(b) Petitions to revise fuel factors.

(1) An electric utility using the fuel factor methodology established in accordance with [~~set forth under~~] subsection (a)(1)(A) of this section may file a petition requesting revised fuel factors in accordance with [~~pursuant to~~] subsection (a)(2)(A) of this section during the first five working [~~business~~] days of the months specified in subsection (d) of this section. A copy of the complete petition package must [~~shall~~] be served on each party in the utility's most recent fuel reconciliation and on OPUC [~~the Office of Public Utility Counsel~~]. Service must [~~shall~~] be accomplished in accordance with §22.74 of this title (relating to Service of Pleadings and Documents) [~~by email if possible~~]. Each complete fuel factor filing package must [~~shall~~] include the [~~commission-prescribed fuel factor~~]application, a tariff sheet reflecting the proposed fuel factors, and supporting testimony that includes the following information:

(A) For each month of the period in which the fuel-factor has been in effect and has not been reconciled up to the most recent month for which information is available,

(i) the revenues collected in accordance with [~~pursuant to~~] fuel factors by customer class;

(ii) any other items that to the knowledge of the electric utility have affected fuel factor revenues and eligible fuel expenses; and

(iii) the difference, by customer class, between the revenues collected in accordance with [~~pursuant to~~] fuel factors and the eligible fuel expenses incurred.

(B) (No change.)

(2) An electric utility using the fuel factor formula methodology established in accordance with [~~set forth under~~] subsection (a)(1)(B) of this section may file a petition requesting revised fuel factors in accordance with [~~pursuant to~~] subsection (a)(2)(B) of this section at least 15 days prior to the first billing cycle in the billing month in which the proposed fuel factors are requested to become effective. A copy of the complete petition package must [~~shall~~] be served on each party in the utility's most recent fuel reconciliation and on OPUC [~~the Office of Public Utility Counsel~~]. Service must [~~shall~~] be accomplished in accordance with §22.74 of this title (relating to Service of Pleadings and Documents) [~~by email if possible~~]. Each complete fuel factor filing package must [~~shall~~] include:

(A) a tariff sheet reflecting the proposed fuel factors;

(B) workpapers (in native Excel format with formulas intact; and proof and verification of natural gas prices, including copies of data used to calculate the natural gas prices) supporting the calculation of the revised fuel factors;

(C) - (D) (No change.)

(c) Fuel factor revision proceeding. Burden of proof and scope of proceeding are as follows:

(1) In a proceeding to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(A) of this section, an electric utility has the burden of proving that:

(A) - (C) (No change.)

(2) The scope of a fuel factor revision proceeding under subsection (a)(1)(B) of this section is limited to the issue of whether the petitioning electric utility has appropriately calculated its proposed fuel factors. In a proceeding to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(B) of this section, an electric utility has the burden of proving that:

(A) - (B) (No change.)

(3) The prudence of costs will not be considered in a fuel factor proceeding. The prudence of costs may only be reviewed in a fuel reconciliation proceeding under §25.236 of this title or another appropriate proceeding.

(d) Schedule for filing petitions to revise fuel factors. A petition to revise fuel factors or to initiate or revise a fuel factor formula may be filed with any general rate proceeding.

(1) Otherwise, except as provided by subsection (f) of this section which addresses emergencies, petitions by an electric utility to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(A) of this section may only be filed in accordance with the following schedule:

(A) February, June, and October: El Paso Electric Company;

(B) March, July, and November: Entergy Texas, Inc.;

(C) April, August, and December: Southwestern Public Service Company;

(D) May, September, and January: Southwestern Electric Power Company; and

(E) March, July, and November: any other electric utility not named in this subsection that uses one or more fuel factors.

(2) Petitions by an electric utility to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(B) of this section may be filed in any month except December.

(e) Procedural schedules.

(1) Upon the filing of a petition to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(A) of this section, the presiding officer will [~~shall~~] set a procedural schedule that will enable the commission to issue a final order in the proceeding as follows:

(A) (No change.)

(B) within 90 days after the petition was filed, if a hearing is requested within 30 days of the petition. If a hearing is requested, the hearing will be held no earlier than the first working [~~business~~] day after the 45th day after the application was filed.

(2) Upon the filing of a petition to revise fuel factors in accordance with [~~pursuant to~~] subsection (a)(1)(B) of this section, the presiding officer will [~~shall~~] set a procedural schedule as follows:

(A) the presiding officer will [~~shall~~] issue an order approving the proposed fuel factors on an interim basis no later than 12 days after the date the petition was filed, if no objection to interim approval is filed within 10 days after the date the petition was filed;

(B) if no hearing is requested within 30 days after the petition was filed, the presiding officer will [~~shall~~], after submission of proof of notice by the electric utility, issue an order approving the fuel factors without hearing or action by the commission; and

(C) if a hearing is requested within 30 days after the petition was filed, the hearing will be held no earlier than the first working [~~business~~] day after the 45th day after the petition was filed and a final

order will be issued within 90 days after the petition was filed, subject to submission of proof of notice by the electric utility.

(f) Emergency revisions to the fuel factor. If fuel curtailments, equipment failure, strikes, embargoes, sanctions, or other reasonably unforeseeable circumstances have caused a material under-recovery of eligible fuel costs, the electric utility may file a petition with the commission requesting an emergency interim fuel factor. Such emergency requests must [~~shall~~] state the nature of the emergency, the magnitude of change in fuel costs resulting from the emergency circumstances, and other information required to support the emergency interim fuel factor. The commission will [~~shall~~] issue an interim order within 30 days after such petition is filed to establish an interim emergency fuel factor. If within 120 days after implementation, the emergency interim factor is found by the commission to have been excessive, the electric utility must [~~shall~~] refund all excessive collections with interest calculated on the cumulative monthly ending material under- or over-recovery [~~overrecovery~~] balance in the manner and at the rate established by the commission for overbilling and underbilling in §25.28(c) and (d) of this title (relating to Bill Payment and Adjustments Billing). If, after full investigation, the commission determines that no emergency condition existed, a penalty of up to 10% of such over-collections may also be imposed on investor-owned electric utilities.

(g) Protest of fuel factor.

(1) Only a customer of the utility, a municipality with original jurisdiction over the utility, or OPUC are eligible to protest a fuel factor under this section.

(2) A protest of a fuel factor is prohibited from raising the prudence of costs as an issue and is limited to the sole issue identified under paragraph (3) of this subsection.

(3) The presiding officer will review a protest of a fuel factor solely to determine whether the utility's fuel factor reasonably reflects costs the utility will incur such that that the utility will not substantially under-collect or over-collect the utility's reasonably stated fuel and purchased power costs on an ongoing basis.

(4) If the presiding officer determines that a fuel factor is anticipated to result in a substantial under- or over-collection of costs by the utility, the presiding officer will adjust the utility's fuel factor to address the under-collection or over-collection in a manner consistent with this section.

(5) The presiding officer may hold a hearing on a protest of a fuel factor at his or her discretion and may consider any evidence that is appropriate and in the public interest.

(6) A protest of a fuel factor may be processed and reviewed in a manner deemed administratively efficient by the presiding officer.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502324
Adriana Gonzales
Rules Coordinator
Public Utility Commission of Texas
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 936-7322

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PART 8. TEXAS RACING COMMISSION

CHAPTER 307. PROCEEDINGS BEFORE THE COMMISSION

SUBCHAPTER C. PROCEEDINGS BY STEWARDS AND RACING JUDGES

16 TAC §307.67

PREAMBLE

The Texas Racing Commission (TXRC) proposes rule amendments in Texas Administrative Code, Title 16, Part 8, Chapter 307, Subchapter C, Proceedings by Stewards, and Racing Judges, §307.67. Appeal to the Commission. The purpose of this rule amendment is to change the procedures, timeline and fine required by a licensee when appealing a ruling to the Commission.

A. ECONOMIC COSTS TO PERSONS AND IMPACT ON LOCAL ECONOMY

There are no anticipated economic costs to persons required to comply with the proposed rule amendments. There is no effect on local economy for the first five years that the proposed rule amendments will be in effect; therefore, no local employment impact statement is required under Texas Government Code §§2001.022 and 2001.024(a)(6).

B. FISCAL IMPACT ON SMALL BUSINESSES, MICRO-BUSINESSES, AND RURAL COMMUNTIES

Amy F. Cook, Executive Director, has determined that the proposed rule amendment will have no direct adverse economic impact on small businesses, micro-businesses, or rural communities. Accordingly, the preparation of an economic impact statement and a regulatory flexibility analysis, as specified in Texas Government Code § 2006.002, is not required.

C. GOVERNMENT GROWTH IMPACT STATEMENT REQUIRED BY TEXAS GOVERNMENT CODE §2001.0221.

Pursuant to Texas Government Code §2001.0221, Texas Racing Commission provides the following government growth impact statement for the proposed rule amendments. For each year of the first five years that the proposed rule amendments will be in effect, the Texas Racing Commission has determined the following:

(1) The proposed rule amendments will not create or eliminate a government program;

(2) Implementation of the proposed rule amendments will not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule amendments will not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule amendments will not require an increase or decrease in fees paid to the agency;

(5) the proposed rule amendments are new rules and therefore create new regulations;

(6) the proposed rule amendments will not expand, limit, or repeal an existing regulation;

(7) the proposed rule amendments will not increase or decrease the number of individuals subject to the rules' applicability; and

(8) the proposed rule amendments will not positively or adversely affect the state's economy.

D. TAKINGS IMPACT ASSESSMENT REQUIRED BY TEXAS GOVERNMENT CODE §2007.043.

Amy F. Cook, Executive Director, has determined that no private real property interests are affected by the proposed rule amendments, and the proposed rule amendments do not restrict, limit, or impose a burden on an owner's rights to his or her private real property that would otherwise exist in the absence of government action. As a result, the proposed rule amendments do not constitute a taking or require a takings impact assessment under Texas Government Code §2007.043.

E. LOCAL EMPLOYMENT IMPACT STATEMENT REQUIRED BY TEXAS GOVERNMENT CODE §2001.024(A)(6).

Amy F. Cook, Executive Director, has determined that the proposed rule amendments are not expected to have any fiscal implications for state or local government as outlined in Texas Government Code §2001.024(A)(6).

F. COST-BENEFIT ANALYSIS REQUIRED BY TEXAS GOVERNMENT CODE §2001.024(A)(5).

Amy F. Cook, Executive Director has determined that the proposed rule amendments are expected to improve the positive economic impact, health, and safety of licensed horse racing in Texas by reducing the impact of unlicensed racing.

G. FISCAL NOTE ANALYSIS REQUIRED BY TEXAS GOVERNMENT CODE §2001.024(A)(4).

Amy F. Cook, Executive Director has determined that no significant fiscal impact is associated with the proposed rule amendment.

H. LEGAL REVIEW REQUIRED BY TEXAS GOVERNMENT CODE §2001.024(A)(3).

Amy F. Cook, Executive Director certifies that a legal review has been completed and the proposal is within agency's legal authority to adopt under §2025.001 of the Texas Occupations Code.

REQUESTS FOR PUBLIC COMMENTS

Comments on the proposal may be submitted to the Texas Racing Commission Executive Director, Amy F. Cook, via webpage comment form at https://www.txrc.texas.gov/texas-rules-of-racing or through the agency customer service desk at customer.service@txrc.texas.gov, or by calling the customer service phone number at (512) 833-6699. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register.*

STATUTORY AUTHORITY. The amendments are proposed under Texas Occupations Code §2025.001.

CROSS REFERENCE TO STATUTE. Texas Occupations Code §2025.001.

§307.67. Appeal to the Commission.

(a) Right to Appeal. A person aggrieved by a ruling of the stewards [~~or racing judges~~] may appeal to the Commission. A person who fails to file an appeal by the deadline and in the form required by this section waives the right to appeal the ruling.

(b) Filing Procedure.

(1) An appeal must be in writing in a form prescribed by the executive director. [~~secretary.~~] An appeal from a ruling of the stewards [~~or racing judges~~] must be filed not later than 5:00 p.m. of the third calendar day after the day the person is informed by the stewards of the ruling. [~~or racing judges~~]. An appeal from the modification of a penalty by the executive director [~~secretary~~] must be filed not later than 5:00 p.m. of the fifth calendar day after the person is informed of the penalty modification. The appeal must be post marked by the fifth day after the person is informed of the penalty modification and mailed to: Texas Racing Commission, 1801 N. Congress, Suite 7.600, Austin, Texas 78701. [~~filed at the main Commission offices in Austin or with the stewards or racing judges at a Texas pari-mutuel racetrack where a live race meet is being conducted. The appeal must be accompanied by a cash bond in the amount of $150, to defray the costs of the court reporter and transcripts required for the appeal. The bond must be in the form of a cashier's check or money order.~~]

(2) Record of Stewards'[~~/Judges'~~] hearing. On notification by the executive director [~~secretary~~] that an appeal has been filed, the stewards [~~or racing judges~~] shall forward to the Commission the record of the proceeding being appealed. A person appealing a stewards' [~~or judges'~~] ruling may request a copy of the record of the hearing. [~~and the executive secretary may assess the cost of making to the copy to the requestor.~~]

(c) Hearing Procedure. A hearing on an appeal from a ruling by the stewards [~~or racing judges~~] is a contested case and shall be conducted by SOAH in accordance with the Rules regarding contested cases. In an appeal, the appellant has the burden to prove that the stewards' [~~or racing judges'~~] decision was clearly in error.

(d) Effect of Appeal on Fine Payment. If a person against whom a fine has been assessed appeals the ruling that assesses the fine, the person shall pay the fine in accordance with the Rules. The executive director shall place the fine amount into the agency suspense account until such time that the appeal is final. If the appeal is disposed of in favor of the appellant, the executive director [~~Commission~~] shall refund the amount of the fine.

(e) Effect of Appeal on Purse Payment. If a ruling that affects the outcome of a race is appealed, the portion of the purse that is involved in the appeal shall be withheld and not distributed. The stewards [~~or racing judges~~] may distribute the portion of the purse that is not involved in or affected by the outcome of the appeal.

(f) Effect of Appeal on Horse Eligibility. If an appeal involves the official order of finish in a horse race, all horses finishing first or declared to be the winner by the stewards carry all penalties of eligibility until the winner is determined through the final resolution of the appeal.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502242
Amy F. Cook
Executive Director
Texas Racing Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 833-6699

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TITLE 19. EDUCATION

PART 1. TEXAS HIGHER EDUCATION COORDINATING BOARD

CHAPTER 1. AGENCY ADMINISTRATION

SUBCHAPTER P. LOWER-DIVISION ACADEMIC COURSE GUIDE MANUAL ADVISORY COMMITTEE

19 TAC §1.195

The Texas Higher Education Coordinating Board (Coordinating Board) proposes amendments to Texas Administrative Code, Title 19, Part 1, Chapter 1, Subchapter P, §1.195, concerning the Lower-Division Academic Course Guide Manual Advisory Committee. Specifically, this amendment will continue the Lower-Division Academic Course Guide Manual Advisory Committee for four more years.

The Lower-Division Academic Course Guide Manual Advisory Committee provides the Coordinating Board with advice and recommendations. The amendment is proposed under Texas Government Code, §2110.008, which requires the Coordinating Board by rule to provide for a different abolishment date for advisory committees to continue in existence.

Rule 1.195, Duration, is amended to change the Lower-Division Academic Course Guide Manual Advisory Committee abolishment date from October 31, 2025, to no later than October 31, 2029.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be the extension of the Lower-Division Academic Course Guide Manual Advisory Committee by four years. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rule will not create or eliminate a government program;

(2) implementation of the rule will not require the creation or elimination of employee positions;

(3) implementation of the rule will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rule will not require an increase or decrease in fees paid to the agency;

(5) the rule will not create a new rule;

(6) the rule will not limit an existing rule;

(7) the rule will not change the number of individuals subject to the rule; and

(8) the rule will not affect this state's economy.

Comments on the proposal may be submitted to Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at AHAcomments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The amendment is proposed under Texas Government Code, Section 2110.008, which provides the Coordinating Board with the authority to provide for a different abolishment date for advisory committees to continue in existence.

The proposed amendment affects Texas Administrative Code, Chapter 1, Subchapter P.

§1.195. Duration.

The committee shall be abolished no later than October 31, 2029 [~~2025~~], in accordance with Texas Government Code, Chapter 2110. It may be reestablished by the Board.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502380
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6182

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CHAPTER 2. ACADEMIC AND WORKFORCE EDUCATION

SUBCHAPTER O. APPROVAL PROCESS AND REQUIRED REPORTING FOR SELF-SUPPORTING DEGREE PROGRAMS

19 TAC §2.357, §2.358

The Texas Higher Education Coordinating Board (Coordinating Board) proposes amendments to Texas Administrative Code, Title 19, Part 1, Chapter 2, Subchapter O, §2.357 and §2.358, concerning Approval Process and Required Reporting for Self-Supporting Degree Programs. Specifically, this amendment will remove the requirement that public institutions of higher education report self-supporting courses to the Coordinating Board.

Texas Education Code, §61.0512(c), assigns the Coordinating Board the responsibility to ensure that proposed academic programs have adequate financing from legislative appropriations or other funding sources. Public institutions of higher education finance self-supporting programs solely through student tuition and fees, without reliance on state funds. These institutions must report student enrollment, semester credit hours, graduates, and fees charged for each self-supporting course, certificate, degree program, or degree track offered. This amendment reduces the requirement for institutions to report each self-supporting course, reducing administrative reporting burdens.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be reducing administrative reporting requirements for public institutions of higher education that offer self-supported courses, certificates, and degree programs. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at AHAcomments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The amendment is proposed under Texas Education Code, Section 61.0512(c), which provides the Coordinating Board with the authority to ensure proposed academic programs have adequate financing.

The proposed amendment affects Texas Education Code, §61.0512(c).

§2.357. Reporting of Approved Self-Supporting Courses, Certificates and Degree Programs.

Each institution shall report the following to the Coordinating Board in the manner prescribed by the Board [~~CBM 00X Reporting Manual~~]:

(1) Enrollments, courses, number of semester credit hours, and graduates associated with each self-supporting course, certificate, degree program or degree program track offered by the institution; and

(2) Fees charged to students for self-supporting courses in accordance with general institutional accounting practices.

§2.358. Effective Dates.

(a) Sections 2.350 - 2.356 of this subchapter are effective May 15, 2025.

(b) Section 2.357 of this subchapter is effective January 1 [~~November 1~~], 2025.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502382
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6182

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CHAPTER 4. RULES APPLYING TO ALL PUBLIC INSTITUTIONS OF HIGHER EDUCATION IN TEXAS

SUBCHAPTER C. TEXAS SUCCESS INITIATIVE

19 TAC §4.52

The Texas Higher Education Coordinating Board (Coordinating Board) proposes amendments to Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter C, §4.52, concerning Texas Success Initiative. Specifically, this amendment excludes students who are public officers and employees from the statutory requirements Texas Success Initiatives.

The Coordinating Board is authorized to adopt rules as necessary by Texas Education Code, §51.334. The revisions implement statutory amendments passed by the 89th Texas Legislature. Specifically, this amendment will update Coordinating Board rules to accurately reflect changes made by Senate Bill (SB) 2786, 89th Texas Legislature, Regular Session. SB 2786, amended Texas Education Code, §51.332, to exclude students who are public officers or employees from the assessment requirements of the Texas Success Initiative (TSI).

Rule 4.52, Applicability, is amended to add three categories of students to whom TSI and college readiness requirements do not apply: emergency medical technicians, fire protection personnel, and peace officers.

Dr. Jennielle Strother, Assistant Commissioner for Student Success, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Dr. Jennielle Strother, Assistant Commissioner for Student Success, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be to accurately reflect statute following adoption of Senate Bill 2786, 89th Texas Legislature, Regular Session. The rules implement the statute to reduce the cost and testing of the categories of public service personnel who are no longer governed by these requirements. There is a reduction in costs to students who are no longer required to pay to test. There will be a small reduction in revenue to the test administrators. These reduction result from the implementation of the statute.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will reduce the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Dr. Jennielle Strother, Assistant Commissioner for Student Success, P.O. Box 12788, Austin, Texas 78711-2788, or via email at StudentSuccess@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The amendment is proposed under Texas Education Code, Section 51.334, which provides the Coordinating Board with the authority to adopt rules as necessary to implement the program.

The proposed amendment affects Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter C.

§4.52. Applicability.

(a) Except as set out in subsection (b) of this section, this subchapter applies to each entering undergraduate student not otherwise exempt under §4.54 of this subchapter (relating to Exemption).

(b) This subchapter does not apply to the following students, and an institution shall not require these students to demonstrate college readiness pursuant to this subchapter. The following figure contains the full list of student categories to whom this subchapter does not apply.
Figure: 19 TAC §4.52(b)
[~~Figure: 19 TAC §4.52(b)~~]

(1) A student who has earned an associate or baccalaureate degree from an institution of higher education;

(2) A student who transfers to an institution of higher education from a private or independent institution of higher education or an accredited out-of-state institution of higher education and who has satisfactorily completed college-level coursework in the corresponding subject area, as transcribed or otherwise determined by the receiving institution;

(3) A student who is enrolled in a certificate program of one year or less at a public junior college, a public technical institute, or a public state college;

(4) A student enrolled in high school who is a non-degree-seeking student as defined in §4.53(8) of this subchapter (relating to Definitions);

(5) A student who is serving on active duty as a member of the armed forces of the United States, the Texas National Guard, or as a member of a reserve component of the armed forces of the United States; [~~or~~]

(6) A student who on or after August 1, 1990, was honorably discharged, retired, or released from active duty as a member of the armed forces of the United States or the Texas National Guard or service as a member of a reserve component of the armed forces of the United States; or[~~,~~]

(7) A student who is:

(A) certified as an emergency medical technician under Chapter 773, Health and Safety Code; and

(B) employed by a political subdivision;

(8) A student who is included as fire protection personnel by Section 419.021, Government Code; or

(9) A student who is elected, appointed, or employed to serve as a peace officer described by Article 2A.001, Code of Criminal Procedure, or other law.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502383
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6537

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SUBCHAPTER P. PROGRAM OF STUDY INSTITUTIONAL REQUIREMENTS

19 TAC §§4.250 - 4.254

The Texas Higher Education Coordinating Board (Coordinating Board) proposes new rules in Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter P, §§4.250 - 4.254, concerning Program of Study Institutional Requirements. Specifically, the new section will reconstitute institutional guidance to higher education institutions regarding Program of Study processes for Certificate 1 credentials, replacing Chapter 26, Subchapter A - P, which is repealed in a separate rulemaking.

Rule 4.250, Authority and Purpose, indicates that the Coordinating Board is authorized to adopt rules and establish policies and procedures for the development, adoption, implementation, funding, and evaluation of career and technical education Program of Study Curricula under Texas Education Code, §61.8235. It indicates that this subchapter covers Program of Study structures and policies for Level 1 Certificates for the purpose of encouraging statewide credit portability for degree completion and supporting recognition and credit transfer for dual-credit achievement.

Rule 4.251, Definitions, provides definitions of words and terms used in the subchapter.

Rule 4.252, General Provisions, provides language concerning semester credit hour career and technical education Program of Study Level 1 certificates, including alignment with accreditor standards and the recording of those credits on student transcripts.

Rule 4.253, Program of Study Credit Transfer, provides language concerning recognition of credit in the cases of lateral transfer (higher education institution to higher education institution) and dual credit transfer (dual credit high school to higher education institution).

Rule 4.254, Effective Date of Rules, establishes an effective date of subchapter rules of November 1, 2025.

Tina Jackson, Assistant Commissioner for Workforce Education, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Tina Jackson, Assistant Commissioner for Workforce Education, has determined that for each year of the first five years the sections are in effect, the public benefit anticipated as a result of administering the sections will be improved rule clarity to higher education institutions regarding Program of Study processes. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Tina Jackson, Assistant Commissioner for Workforce Education, P.O. Box 12788, Austin, Texas 78711-2788, or via email at RulesComments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The new section is proposed under Texas Education Code), Section 61.8235, which provides the Coordinating Board with the authority to adopt rules and establish policies and procedures for the development, adoption, implementation, funding, and evaluation of career and technical education Program of Study Curricula.

The proposed new section affects Texas Education Code, Sections 28.009 and 130.008.

§4.250. Authority and Purpose.

(a) The Board is authorized to adopt rules and establish policies and procedures for the development, adoption, implementation, funding, and evaluation of career and technical education Program of Study Curricula, under Texas Education Code, §61.8235.

(b) The purpose of this subchapter is to provide for the development and implementation of career and technical education Program of Study structures and policies for Level 1 Certificates, which consist of at least 15 semester credit hours and no more than 42 semester credit hours and are designed for a student to complete in one calendar year or less, that encourage statewide credit portability for degree completion and support recognition and credit transfer for dual-credit achievement.

§4.251. Definitions.

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Career Cluster--Commissioner-approved organizing unit that is the basis for the development of programs of study.

(2) Coordinating Board--The agency known as the Texas Higher Education Coordinating Board, including agency staff.

(3) Commissioner--The Texas Commissioner of Higher Education.

(4) Credential--A grouping of subject matter courses or demonstrated mastery of specified content which entitles a student to documentary evidence of completion. This term encompasses certificate programs, degree programs, and other kinds of formal recognition such as short-term workforce credentials or a combination thereof.

(5) Equivalent Course Credit--Credit awarded to a student, in recognition that a course from one two-year institution is comparable to a course at another two-year institution, that allows the student to fulfill credential completion requirements.

(6) Program of Study Curriculum--The block of courses that progress in content specificity by beginning with all aspects of a career cluster, including career and technical education standards, which address relevant career and technical education content and that incorporate entry and exit points.

(7) Program of Study Foundation Courses--A set of core career and technical education courses that compose the Program of Study Curriculum in a Level 1 Certificate.

(8) Program of Study Level 1 Certificate--The credential conferred to a student upon successful completion of the Program of Study Curriculum. A Program of Study Level 1 Certificate consists of at least 15 semester credit hours and no more than 42 semester credit hours and is designed for a student to complete in one calendar year or less.

(9) Public Two-Year Institution--Any community, technical, or state college as defined in Texas Education Code, §61.003.

(10) Workforce Education Course Manual--An online database composed of the Coordinating Board's statewide inventory of approved career and technical education courses available for institutions to use in industry-recognized credentials, certificates, and applied associate degree programs.

§4.252. General Provisions.

(a) This subchapter applies specifically to semester credit hour career and technical education Program of Study Level 1 Certificates and does not apply to academic programs and associate degree programs.

(b) Institutional policies regarding acceptance of credit for credit-by-examination, and other credit-earning instruments must be consistent with the institution's accreditor's guidelines and must treat transfer and intra-institutional students in the same manner.

(c) Nothing in this subchapter limits the authority of an institution of higher education to establish its own admissions standards or grading policies, provided they are consistent with this subchapter and apply equally to both transfer and intra-institutional students.

(d) A public two-year institution shall comply with the institution's approved institutional credit transfer policy in the determination to award credit for successful completion of one or more Program of Study Foundation Courses.

(e) A public two-year institution shall post the institution's approved institutional credit transfer policy in a prominent place on its website for reference by prospective students.

(f) A public two-year institution shall include each Program of Study Foundation Course that a student has successfully completed on the student's transcript, as recommended by the Texas Association of Collegiate Registrars and Admissions Officers.

(g) A public two-year institution shall include each Program of Study Foundation Course that a student successfully completed prior to enrolling at the institution and for which the institution awarded equivalent course credit on the student's transcript.

(h) The Coordinating Board shall maintain a public website that includes all approved Program of Study Curricula.

§4.253. Program of Study Credit Transfer.

(a) A postsecondary student enrolled in a Program of Study Level 1 Certificate who laterally transfers from a public two-year institution to another public two-year institution that offers a similar program, regardless of whether the institution has adopted the Program of Study Level 1 Certificate, shall receive equivalent course credit from the institution to which the student transferred for each Program of Study Foundation Course that the student had successfully completed in the Program of Study Curriculum.

(b) A secondary student who successfully completes one or more Program of Study Foundation Courses in a Program of Study Curriculum while enrolled in dual-credit and who subsequently enrolls in a public two-year institution that offers a similar course or courses, regardless of whether the institution has adopted the Program of Study Level 1 Certificate, shall receive equivalent course credit from the institution.

(c) Unless otherwise prohibited by the institution's accreditor:

(1) A postsecondary student who transfers and receives equivalent course credit may complete the Program of Study Level 1 Certificate at the receiving institution by completing only the remaining Program of Study Foundation Courses and semester credit hours that are required in the Program of Study Curriculum.

(2) A secondary student who enrolls in a Program of Study Level 1 Certificate and receives equivalent course credit may complete the Program of Study Level 1 Certificate at the institution by completing only the remaining Program of Study Foundation Courses and semester credit hours that are required in the Program of Study Curriculum.

§4.254. Effective Date of Rules.

This subchapter is effective January 1, 2026.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502384
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6209

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SUBCHAPTER Q. APPROVAL OF OFF-CAMPUS AND SELF-SUPPORTING COURSES AND PROGRAMS FOR PUBLIC INSTITUTIONS

19 TAC §§4.270 - 4.279

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the repeal of Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter Q, §§4.270 - 4.279, concerning Approval of Off-Campus and Self-Supporting Courses and Programs for Public Institutions. Specifically, this repeal will remove existing rules that will be replaced with new rules in Chapter 2, Subchapter P.

The Coordinating Board is authorized by Texas Education Code, §61.0512(g), which states that institutions may offer off-campus credit courses only with prior approval from the Coordinating Board and Texas Education Code, §51.661, which authorizes the Coordinating Board to adopt state uniform service regions for Higher Education.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be improved rule clarity of the approval and reporting requirements for institutions while ensuring compliance with state and federal regulations. The repealed rules in Chapter 4, Subchapter Q, will be replaced with new rules in Chapter 2, Subchapter P. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at AHAcomments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The repeal is proposed under Texas Education Code, Section 61.0512(g), which states that institutions may offer off-campus credit courses only with prior approval from the Coordinating Board and Texas Education Code, Section 51.661, which authorizes the Coordinating Board to adopt state uniform service regions for Higher Education.

The proposed repeal affects Texas Education Code, Sections 61.0512(g) and 51.661.

§4.270. Purpose.

§4.271. Authority.

§4.272. Definitions.

§4.273. General Provisions.

§4.274. Standards and Criteria for Institutions.

§4.275. Standards and Criteria for Off-Campus and Self-Supporting Programs.

§4.276. Standards and Criteria for Off-Campus and Self-Supporting Courses.

§4.277. Standards and Criteria for Off-Campus and Self-Supporting Courses Faculty.

§4.278. Functions of Regional Councils.

§4.279. Formula Funding General Provisions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502385
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6182

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SUBCHAPTER Z. UNIFORM STANDARDS FOR PUBLICATION OF COST OF ATTENDANCE AND FINANCIAL AID INFORMATION

19 TAC §§4.390 - 4.393

The Texas Higher Education Coordinating Board (Coordinating Board) proposes new rules in Texas Administrative Code, Title 19, Part 1, Chapter 4, Subchapter Z, §§4.390 - 4.393, concerning Uniform Standards for Publication of Cost of Attendance and Financial Aid Information. Specifically, this new section will establish the authority and purpose, definitions, and substantive requirements of institutions relating to the publication of cost of attendance and financial aid information on their websites. The substance of this new subchapter consists of the reconstituted Chapter 21, Subchapter PP, which is repealed in a separate rulemaking.

The Coordinating Board is authorized by Texas Education Code, §61.0777, to adopt rules relating to uniform standards.

Rule 4.390, Authority and Purpose, notes the statutory authority for the subchapter's rules and outlines the purpose of the provisions of the subchapter. It is the reconstituted and simplified §21.2220.

Rule 4.391, Definitions, establishes definitions for relevant words and terms in the subchapter. It is the reconstituted §21.2221, with definitions removed that are unnecessary or duplicative with §4.3, which contains definitions that apply throughout Chapter 4.

Rule 4.392, Publication of Cost of Attendance and Financial Aid Information, establishes the substantive requirements relating to institutions of higher education publishing cost of attendance and financial aid information on their websites. Compared with existing §21.2222, this rule provides greater detail regarding what information institutions must publish relating to cost of attendance and student financial aid, improving overall transparency for students and families.

Rule 4.393, Net Price Information, establishes the substantive requirements relating to the Coordinating Board's Net Price Calculator tool and the related institutional reporting requirements, previously addressed by other sections of §21.2222. Subsection (a) sets forth the requirements in Texas Education Code, §61.0777(f), and subsection (b) establishes institutional requirements for reporting information that is used by the tool to make accurate calculations for students.

Dr. Charles Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rules. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rules.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Dr. Charles Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, has also determined that for each year of the first five years the sections are in effect, the public benefit anticipated as a result of administering the sections will be the improved public transparency regarding the cost of higher education and availability of student financial aid through clarified institutional requirements. There are no anticipated economic

costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Dr. Charles Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at SFAPPolicy@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The new section is proposed under Texas Education Code, Section §61.0777, which provides the Coordinating Board with the authority to adopt rules relating to the provisions of that section.

The proposed new section affects Texas Administrative Code, Title 19, Part 1, Chapter 4.

§4.390. Authority and Purpose.

(a) Authority. Authority for this subchapter is provided in the Texas Education Code, §61.0777.

(b) Purpose. The purpose of this subchapter is to prescribe uniform standards intended to ensure that information regarding the cost of attendance at institutions of higher education is available to the public in a manner that is consumer-friendly and readily understandable to prospective students and their families.

§4.391. Definitions.

In addition to the words and terms defined in §4.3 of this chapter (relating to Definitions), the following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

(1) Coordinating Board--The agency known as the Texas Higher Education Coordinating Board, including agency staff.

(2) First-Time Entering Full-Time Student--A student who has no prior postsecondary experience (except as noted below) attending any institution for the first time at the undergraduate level and who enrolls for 15 credit hours per semester for two consecutive semesters. This includes students enrolled in academic or occupational programs. It also includes students enrolled in the fall term who attended college for the first time in the prior summer term, and students who entered with advanced standing (college credits earned before graduation from high school).

(3) Net Price of Attendance--The total cost of attendance less the student's estimated merit-based and need-based grant aid. The net price of attendance may be a range.

(4) Total Cost of Attendance--An institution's estimate of the expenses incurred by a typical financial aid recipient in attending a particular institution of higher education. It includes direct educational costs (tuition and fees) as well as indirect costs (room and board, books and supplies, transportation, personal expenses, and other allowable costs for financial aid purposes).

§4.392. Publication of Cost of Attendance and Financial Aid Information.

(a) Each institution of higher education that offers an undergraduate degree or certificate program shall prominently display on the institution's website the total cost of attendance for a first-time entering full-time student in accordance with the uniform standards prescribed by subsection (b) of this section.

(b) Uniform Standards for Cost of Attendance Information. In publishing the total cost of attendance as required by subsection (a) of this section, an institution shall include:

(1) A definition or explanation of total cost of attendance that includes, at a minimum, all aspects specified in the definition of that term in §4.391 of this subchapter (relating to Definitions);

(2) Notice that the total cost of attendance provided is an estimate, and that students may experience higher or lower costs due to individual circumstances;

(3) An explanation of the relationship between total cost of attendance and a student's financial aid opportunities; and

(4) Inclusion of, or a link to, the information required by subsection (c) of this section.

(c) Financial Aid Information. Each institution of higher education shall provide consumer-friendly and readily understandable information regarding student financial aid opportunities. This information shall include, at a minimum:

(1) A link to access the Free Application for Federal Student Aid (FAFSA) and Texas Application for State Financial Aid (TASFA);

(2) Information, or links to information, regarding merit-based and need-based federal and state financial aid programs that could reasonably be available to a student at the institution;

(3) If applicable, information regarding the priority deadline established under §22.6 of this title (relating to Applying for State Financial Aid), including the deadline for the applicable year and an explanation of the deadline's purpose and function that meets or exceeds the information included in §22.6(a)(2) of this title; and

(4) A link to the program or tool described by §4.393(a) of this subchapter (relating to Net Price Information).

(d) The institution shall consider the uniform standards prescribed by subsection (b) of this section when providing information regarding the cost of attendance for nonresident students, graduate students, or students enrolled in professional programs.

§4.393. Net Price Information.

(a) The Coordinating Board shall provide on its website a program or similar tool that will compute for a person the estimated net price of attendance for a first-year entering full-time student attending an institution of higher education.

(b) Each institution of higher education, as defined in §4.3 of this chapter (relating to Definitions), shall provide the Coordinating Board, at least annually but also upon request, any information necessary for the Coordinating Board to calculate the net price of attendance for a first-time entering full-time student. The Coordinating Board will specify the necessary information for this purpose in guidance provided to institutions and published on its website.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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For further information, please call: (512) 427-6365

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CHAPTER 6. HEALTH EDUCATION, TRAINING, AND RESEARCH FUNDS SUBCHAPTER A. FAMILY PRACTICE RESIDENCY PROGRAM

19 TAC §§6.1 - 6.10

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the repeal of Texas Administrative Code, Title 19, Part 1, Chapter 6, Subchapter A, §§6.1- 6.10, concerning the Family Practice Residency Program. Specifically, this repeal will remove existing rules that will be replaced with new rules in Chapter 10, Subchapter B.

The proposed repeal of Chapter 6, Subchapter A, is part of an effort to consolidate grant program rules in Chapter 10, Grant Programs. The Coordinating Board is authorized by Texas Education Code, §§61.501- 61.506, to administer the Family Practice Residency Program.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be improved rule clarity by consolidating all grant program related rules into Chapter 10. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at AHAcomments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The repeal is proposed under Texas Education Code, Sections 61.501- 61.506, which provides the Coordinating Board with the authority to administer the Family Practice Residency Program.

The proposed repeal affects Texas Education Code, §§6.501 - 61.506.

§6.1. Purpose.
§6.2. Authority.
§6.3. Definitions.
§6.4. Types of Grants.
§6.5. Award of Family Practice Residency Grants.
§6.6. Review of Family Practice Residency Grant Applications.
§6.7. Requirements for a Family Residency Operational Grant.
§6.8. Requirements for a Support Grant.
§6.9. Requirements for a Rural Rotation Reimbursement Grant.
§6.10. Requirements for a Public Health Rotation Reimbursement Grant.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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CHAPTER 10. GRANT PROGRAMS SUBCHAPTER SS. TEXAS RESKILLING AND UPSKILLING THROUGH EDUCATION (TRUE) GRANT PROGRAM

19 TAC §§10.890 - 10.898

The Texas Higher Education Coordinating Board (Coordinating Board) proposes new rules in Texas Administrative Code, Title 19, Part 1, Chapter 10, Subchapter SS, §§10.890 - 10.898, concerning the Texas Reskilling and Upskilling Through Education (TRUE) Grant Program. Specifically, this new section will consolidate grant program related rules in Chapter 10 and will replicate the legislative intent and necessary language found in Chapter 13, Subchapter N, which is repealed in a separate rulemaking.

The proposed new subchapter will establish processes for the TRUE Grant Program's organization and implementation. The

Coordinating Board is authorized by Texas Education Code, Chapter 61, Subchapter T-2, §61.882(b), to adopt rules to carry out the purpose of this program.

Rule 10.890, Authority, identifies the section of the Texas Education Code that grants the Coordinating Board authority over the TRUE Grant Program.

Rule 10.891, Purpose, sets out the purpose of the subchapter as a whole, to establish processes for the TRUE Grant Program's organization and implementation.

Rule 10.892, Definitions, lists definitions broadly applicable to all sections of subchapter N. The definitions establish a common understanding of the meaning of key terms used in the rules.

Rule 10.893, Eligibility, identifies eligible entities that may apply for the TRUE grant as specified by statute. The TRUE Grant Program has three categories of eligible entities: (1) lower-division institution of higher education; (2) consortium of lower-division institutions of higher education; or (3) local chamber of commerce, trade association, or economic development corporation that partners with a lower-division institution of higher education or a consortium of lower-division institutions of higher education.

Rule 10.894, Application Procedures, identifies TRUE grant application procedures so that grant applicants understand high level requirements and refer to the TRUE Grant Program Request for Applications (RFA) for specifics. Grant application procedures described include the number of applications eligible entities may submit, the process of submitting applications to the Coordinating Board, the importance of adhering to grant program requirements, and the requirement for proper authorization and timely submission of applications.

Rule 10.895, Awards, identifies the size and provision of TRUE grant awards. TRUE Grant Program available funding is dependent on the legislative appropriation for the program for each biennial state budget. Consequently, award levels and estimated number of awards will be specified in the program's RFA. This section also provides reference on the establishment of processes for application approval and award sizes.

Rule 10.896, Review Criteria, provides TRUE grant application review procedures. This section describes how the Coordinating Board will utilize specific requirements and award criteria described in a TRUE Grant Program RFA to review applications. Award criteria will include, but may not be limited to, consideration of key factors and preferred application attributes described in the RFA.

Rule 10.897, Reporting Criteria, describes TRUE grant reporting requirements. The Coordinating Board will request data on TRUE Grant Program funded credential programs as well as data on students enrolled in those programs. Student level data will enable the Coordinating Board to track student enrollment, credential completion, and employment data through state education and workforce databases.

Rule 10.898, General Information, indicates general information concerning the cancellation or suspension of TRUE grant solicitations and the use of the Notice of Grant Award (NOGA).

Tina Jackson, Assistant Commissioner for Workforce Education, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Tina Jackson, Assistant Commissioner for Workforce Education, has also determined that for each year of the first five years the sections are in effect, the public benefit anticipated as a result of administering the sections will be the consolidation of grant program related rules in Chapter 10. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Tina Jackson, Assistant Commissioner for Workforce Education, P.O. Box 12788, Austin, Texas 78711-2788, or via email at RulesComments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The new section is proposed under Texas Education Code, Chapter 61, Subchapter T-2, Section 61.882(b), which provides the Coordinating Board with the authority to adopt rules requiring eligible entities awarded a Texas Reskilling and Upskilling Through Education (TRUE) grant to report necessary information to the Coordinating Board.

The proposed new section affects Texas Administrative Code, Title 19, Part 1, Chapter 10, Subchapter SS.

§10.890. Purpose.

The purpose of this subchapter is to establish the Texas Reskilling and Upskilling Through Education (TRUE) Program to strengthen the Texas workforce and build a stronger Texas economy. Awards will be made to eligible entities for creating, redesigning, or expanding workforce training programs and delivering education and workforce training.

§10.891. Authority.

The authority for this subchapter is found in Texas Education Code, Chapter 61, Subchapter T-2, §§61.882(b)1-886, which provides the Coordinating Board with the authority to administer the TRUE Program in accordance with the subchapter and rules adopted under the subchapter.

§10.892. Definitions.

The following words and terms when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Eligible Entity--A lower-division institution of higher education; a consortium of lower-division institutions or higher education; or a local chamber of commerce, trade association, or economic development corporation that partners with a lower-division institution of higher education or a consortium of lower-division institutions of higher education per Texas Education Code, §61.881(1).

(2) Lower-Division Institution of Higher Education--A public junior college, public state college, or public technical institute per Texas Education Code, §61.881(1).

(3) Necessary Information--Data and reporting on student enrollment, credential completion, and employment outcomes for students in TRUE funded programs per Texas Education Code, §61.883(a)(6).

(4) Program--The Texas Reskilling and Upskilling Through Education (TRUE) Grant Program.

§10.893. Eligibility.

Eligible entities may apply for a grant under the TRUE Grant Program.

§10.894. Grant Application Procedures.

(a) Unless otherwise specified in the RFA, eligible entities may submit a maximum of two applications: one as a single recipient and the other as a member of a consortium.

(b) To qualify for funding consideration, an eligible entity must submit an application to the Coordinating Board, and each application must:

(1) Be submitted electronically in a format and location specified in the RFA;

(2) Adhere to the grant program requirements contained in the RFA; and

(3) Be submitted with proper authorization on or before the day and time specified by the RFA.

§10.895. Awards.

(a) The amount of funding available to the program is dependent on the legislative appropriation for the program for each biennial state budget. Award levels and estimated number of awards will be specified in the RFA.

(b) TRUE Grant Program awards shall be subject to approval pursuant to §1.16 of this title (relating to Contracts, Including Grants, for Materials and/or Services).

(c) The Commissioner may adjust the size of the award to best fulfill the purpose of the RFA.

§10.896. Review Criteria.

(a) The Coordinating Board shall select applicants for funding based on requirements and award criteria provided in the RFA. Award criteria in a RFA shall at a minimum include consideration of the following key factors:

(1) Projects that lead to postsecondary industry certifications or other workforce credentials required for high-demand occupations;

(2) Projects that are developed and provided in consultation with employers who are hiring in high-demand occupations;

(3) Projects that create pathways to employment for students and learners;

(4) Projects with at least one eligible entity located in each region of the state to the extent practicable;

(5) Projects that ensure that each training program matches regional workforce needs, are supported by a labor market analysis of job postings and employers hiring roles with the skills developed by the program; and do not duplicate existing program offerings except as necessary to accommodate regional demand; and

(6) Coordinating Board staff shall select at least three reviewers for the applications.

(b) Projects may be given preference that:

(1) Represent a consortium of lower-division institutions of higher education;

(2) Prioritize training to displaced workers;

(3) Offer affordable training programs to students; or

(4) Partner with local chambers of commerce, trade associations, economic development corporations, and local workforce boards to analyze job postings and identify employers hiring roles with the skills developed by the training programs.

§10.897. Reporting Criteria.

(a) Interim and Final Reporting for the TRUE Grant Program. Grantees must file program and expenditure reports and student reports if applicable to the Coordinating Board during the grant period and at its conclusion as required by the RFA. Grantees shall provide information that includes, but is not limited to, the following:

(1) Characteristics of the credential programs that are being worked on by the project;

(2) Status of the grant project activities;

(3) Budget expenditures by budget category;

(4) Student level data for students receiving financial aid funded by the grant as applicable;

(5) Student enrollment data as applicable; and

(6) Any other information required by the RFA.

(b) Ongoing Data Collection and Reporting for the TRUE Grant Program. Grantees shall submit necessary information concerning student enrollment, credential completion, and employment outcomes for students in TRUE funded programs per Texas Education Code, §61.883(a)(6).

(c) The Coordinating Board will request an updated list of TRUE developed and funded credential programs with required data points from grant holders annually at the end of June of each year following the end of the grant period.

(d) The Coordinating Board will request a roster with required data points for all students enrolled in the listed credential program or programs funded through TRUE from grant holders annually at the end of June of each year following the end of the grant period.

§10.898. General Information.

(a) Cancellation or Suspension of Grant Solicitations. The Board and Commissioner retain the right to reject all applications and cancel a grant solicitation at any point.

(b) Notice of Grant Award (NOGA). Before release of funds, the successful applicants must sign a NOGA issued by the Coordinating Board.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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CHAPTER 12. OPPORTUNITY HIGH SCHOOL DIPLOMA PROGRAM

SUBCHAPTER A. OPPORTUNITY HIGH SCHOOL DIPLOMA PROGRAM

19 TAC §12.5

The Texas Higher Education Coordinating Board (Coordinating Board) proposes amendments to Texas Administrative Code, Title 19, Part 1, Chapter 12, Subchapter A, §12.5, concerning Opportunity High School Diploma Program. Specifically, this amendment will provide additional detail and assessments to the list of approved assessments and documentation for the program.

This amendment is proposed under Texas Education Code, §130.458, which provides the Coordinating Board with the authority to adopt rules as necessary to implement the Opportunity High School Diploma Program. The assessments listed in Figure 1 are required to be used by any two-year institution that is approved to offer the diploma program in determining a student's prior learning and successful program completion. The list was established following: an analysis of assessments used in alternative high school diploma program across the nation, the determination of cut scores for high school completion in each core competency, consultation with two-year institutions on potential content gaps in the assessments and potential action to remedy gaps, and consultation with the Texas Workforce Commission.

Rule 12.5, Program Requirements, is amended to update Figure 19 TAC in subsection (d)(4) to include new approved assessments and update documentation to measure competency mastery.

Lee Rector, Associate Commissioner for Workforce Education, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Lee Rector, Associate Commissioner for Workforce Education, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be the increased detail for public junior colleges approved to offer the Opportunity High School Diploma around approved assessments and documentation to determine student achievement. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Lee Rector, Associate Commissioner for Workforce Education, P.O. Box 12788, Austin, Texas 78711-2788, or via email at RulesComments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The amendment is proposed under Texas Education Code, Section 130.458, which provides the Coordinating Board with the authority to adopt rules as necessary to implement the Opportunity High School Diploma Program.

The proposed amendment affects Texas Administrative Code, Title 19, Part 1, Chapter 12, Subchapter A.

§12.5. Program Requirements.

(a) - (c) (No change.)

(d) Prior Learning and Program Completions. A public junior college approved to offer this program shall determine each student's competence in each of the five core program competencies set out in subsection (c) of this section prior to enrolling the student in the program of instruction and upon the student's completion of the program of instruction.

(1) The program of instruction assigned to each student will be based on the student's prior learning and assessments of the student's competencies for each of the five core program competencies set out in subsection (c) of this section. An institution may determine that a student has satisfied required learning outcomes for one or more core program competencies based on the student's prior learning.

(2) An institution may use any of the following methods as documentation of a student's prior learning in the five core program competencies:

(A) transcripted high school grades;

(B) transcripted college credit;

(C) achievement on a national standardized test such as the SAT or ACT;

(D) credit earned through military service as recommended by the American Council on Education; or

(E) demonstrated success on pre-program assessments.

(3) The Commissioner shall identify, consider, and approve assessments, in consultation with the Texas Workforce Commission, to be used by a public junior college to determine a student's successful achievement of the five core program competencies and completion of the program.

(4) Assessments approved by the Commissioner are listed in Figure 1.

Figure: 19 TAC §12.5(d)(4)

[~~Figure: 19 TAC §12.5(d)(4)~~]

(5) A public junior college that is approved to offer the program shall use an approved assessment to evaluate each student's competence in the five core program competencies as required under subsection (c) of this section.

(e) - (h) (No change.)

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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CHAPTER 13. FINANCIAL PLANNING
SUBCHAPTER N. TEXAS RESKILLING AND UPSKILLING THROUGH EDUCATION (TRUE) GRANT PROGRAM

19 TAC §§13.400 - 13.408

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the repeal of Texas Administrative Code, Title 19, Part 1, Chapter 13, Subchapter N, §§13.400 - 13.408, concerning Texas Reskilling and Upskilling through Education (TRUE) Grant Program. Specifically, this repeal will allow the relocation of this subchapter to Chapter 10, Subchapter SS.

The proposed repeal of Chapter 13, Subchapter N, is part of an effort to consolidate grant program rules in Chapter 10, Grant Programs. The Coordinating Board is authorized by Texas Education Code, Chapter 61, Subchapter T-2, §61.882(b), to adopt rules to carry out the purpose of this program.

Tina Jackson, Assistant Commissioner for Workforce Education, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Tina Jackson, Assistant Commissioner for Workforce Education, has also determined that for each year of the first five years the sections are in effect, the public benefit anticipated as a result of administering the sections will be improved rule clarity by consolidating all grant program related rules into Chapter 10. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Tina Jackson, Assistant Commissioner for Workforce Education, P.O. Box 12788, Austin, Texas 78711-2788, or via email at RulesComments@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The repeal is proposed under the Texas Education Code, Chapter 61, Subchapter T-2, Section 61.882(b), which provides the Coordinating Board with the authority to adopt rules requiring eligible entities awarded a Texas Reskilling and Upskilling Through Education (TRUE) grant to report necessary information to the Coordinating Board.

The proposed repeal affects Texas Administrative Code, Title, 19, Part 1, Chapter 13, Subchapter N, Sections 13.400 - 13.408.

§13.400. Purpose.
§13.401. Authority.
§13.402. Definitions.
§13.403. Eligibility.
§13.404. Grant Application Procedures.
§13.405. Awards.
§13.406. Review Criteria.
§13.407. Reporting Criteria.
§13.408. General Information.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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CHAPTER 15. RESEARCH FUNDS
SUBCHAPTER A. GENERAL PROVISIONS

19 TAC §15.1, §15.10

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the repeal of Texas Administrative Code, Title 19, Part 1, Chapter 15, Subchapter A, §15.1 and §15.10, concerning General Provisions. Specifically, this repeal will conform with the repeal of the Texas Research Incentive Program (TRIP) in statute, in accordance with the provisions of Senate Bill (S.B.) 2066, 89th Texas Legislature, Regular Session.

Subchapter A, General Provisions, contains definitions and rules related to TRIP. Rule 15.1, defines the Commissioner and Coordinating Board or Board. Rule 15.10, establishes the purpose and authority of the program; provides definitions of terms; describes the distribution of matching grants, application requirements, returned gifts; and outlines the application review and certification processes. Prior to its repeal, Texas Education Code, §62.124, authorized the Board to adopt rules for the administration of the program.

With the enactment of S.B. 2066, the governing statute related to the TRIP program is repealed; therefore the TRIP-related rules will be repealed.

Andy MacLaurin, Assistant Commissioner for Funding and Resource Planning, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Andy MacLaurin, Assistant Commissioner for Funding and Resource Planning, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section will be to accurately reflect statue following adoption of Senate Bill 2066, 89th Texas Legislature, Regular Session. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Andy MacLaurin, Assistant Commissioner for Funding and Resource Planning, P.O. Box 12788, Austin, Texas 78711-2788, or via email at Funding@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The repeal is proposed in accordance with changes made by Senate Bill 2066, 89th Texas Legislature, Regular Session, which repeals the TRIP program.

The proposed repeal affects Texas Education Code, Sections 62.121, 62.122, 62.123, and 62.124.

§15.1. Definitions.

§15.10. Texas Research Incentive Program (TRIP).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502419
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6495

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CHAPTER 21. STUDENT SERVICES

The Texas Higher Education Coordinating Board (Coordinating Board) proposes repeal of Texas Administrative Code, Title 19, Part 1, Chapter 21: Subchapter A, §21.8, General Provisions; Subchapter C, §§21.45 - 21.49, Student Indebtedness; Subchapter I, §§21.213 - 21.219, Exemption Program for Children of Professional Nursing Program Faculty and Staff; Subchapter L, §§21.309 - 21.316, Exemption Program for Clinical Preceptors and Their Children; Subchapter Q, §§21.518 - 21.526, Exemption for Peace Officers Enrolled in Law Enforcement or Criminal Justice Courses; Subchapter U, §§21.634 - 21.642, The Good Neighbor Scholarship Program; Subchapter Z, §§21.786 - 21.792, Exemption for Firefighters Enrolled in Fire Science Courses; Subchapter AA, §§21.901 - 21.910, Reciprocal Educational Exchange Program; Subchapter BB, §§21.931 - 21.938, Programs for Enrolling Students from Mexico; Subchapter EE, §§21.990 - 21.994, Texas National Student Exchange Program; Subchapter II, §§21.1080 - 21.1089, Educational Aide Exemption Program; Subchapter PP, §§21.2220 - 21.2222, Provisions for Uniform Standards for Publication of Cost of Attendance Information; Subchapter SS, §§21.2260 - 21.2263, Waiver Programs for Certain Nonresident Persons; and Subchapter TT, §§21.2270 - 21.2276, Exemption Program for Dependent Children of Persons Who Are Members of Armed Forces Deployed on Combat Duty. Specifically, the repeal will allow the relocation of the rules to more appropriate locations in Coordinating Board rules.

The Coordinating Board is authorized by Texas Education Code, §§51.930, 52.335, 54.213, 54.2031, 54.231, 54.331, 54.353, 54.3531, 54.355, 54.356, 54.363, 56.0035, and 61.0777, to adopt rules relating to the provisions of these sections.

Rule 21.8, Definition of Student Financial Need, is repealed. Because rules for any programs that are impacted by student financial need are removed from Chapter 21, and other chapters already include rule definitions for "financial need" that align with the provisions of the section, the rule is not to be relocated.

Chapter 21, Subchapter C, is repealed. The provisions of that subchapter, as revised, are relocated to the newly created Chapter 24, Subchapter C, Annual Student Loan Debt Disclosure.

Chapter 21, Subchapter PP, is repealed. The provisions of that subchapter, as revised, are relocated to the newly created Chapter 4, Subchapter Z, Uniform Standards for Publication of Cost of Attendance Information.

Chapter 21, Subchapters I, L, Q, U, Z, AA, BB, EE, II, SS, and TT are repealed. The provisions of these subchapters, as revised, are relocated to the newly created Chapter 13, Subchapter P, Tuition Exemptions and Waivers.

Dr. Charles W. Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Dr. Charles W. Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, has also determined that for each year of the first five years the sections are in effect, the public benefit anticipated as a result of administering the sections will be the improved rule clarity and navigability through consolidation of rules for similar programs. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rules; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Dr. Charles W. Contéro-Puls, Assistant Commissioner for Student Financial Aid Programs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at SFAPPolicy@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

SUBCHAPTER A. GENERAL PROVISIONS

19 TAC §21.8

The repeal is proposed under Texas Education Code, Section 56.0035, which provides the Coordinating Board with the authority to adopt rules relating to the provisions of that chapter.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter A, §21.8.

§21.8. Definition of Student Financial Need.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502420
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER C. STUDENT INDEBTEDNESS

19 TAC §§21.45 - 21.49

The repeal is proposed under Texas Education Code, Section 52.335, which provides the Coordinating Board with the authority to adopt rules relating to the annual student loan debt disclosure.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter C, §§21.45 - 21.49.

§21.45. Authority and Purpose.

§21.46. Student Loan Debt Disclosure Annual Notification; Effective Date.

§21.47. Definitions.

§21.48. Student Loan Debt Disclosure Procedure.

§21.49. Student Loan Debt Disclosure Required Elements.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER I. EXEMPTION PROGRAM FOR CHILDREN OF PROFESSIONAL NURSING PROGRAM FACULTY AND STAFF

19 TAC §§21.213 - 21.219

The repeal is proposed under Texas Education Code, Section 54.355, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter I, §§21.213 - 21.219.

§21.213. Authority and Purpose.

§21.214. Definitions.

§21.215. Tuition Exemption.

§21.216. Eligible Students.

§21.217. Proration of Exemption.

§21.218. Application Process.

§21.219. Hardship Provisions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER L. EXEMPTION PROGRAM FOR CLINICAL PRECEPTORS AND THEIR CHILDREN

19 TAC §§21.309 - 21.316

The repeal is proposed under Texas Education Code, Section 54.356, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter L, §§21.309 - 21.316.

§21.309. Authority and Purpose.

§21.310. Definitions.

§21.311. Tuition Exemption.

§21.312. Eligible Preceptors.

§21.313. Eligible Children.

§21.314. Discontinuation of Eligibility.

§21.315. Value of the Exemption.

§21.316. Application Process.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER Q. EXEMPTION FOR PEACE OFFICERS ENROLLED IN LAW ENFORCEMENT OR CRIMINAL JUSTICE COURSES

19 TAC §§21.518 - 21.526

The repeal is proposed under Texas Education Code, Section 54.3531, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter Q, §§21.518 - 21.526.

§21.518. Authority and Purpose.

§21.519. Definitions.

§21.520. Tuition and Laboratory Fees Exemption.

§21.521. Eligible Peace Officers.

§21.522. Eligible Courses.

§21.523. Excess Hours.

§21.524. Degree and Certificate Programs and Courses Eligible for the Exemption.

§21.525. Report to Legislature.

§21.526. Hardship Provisions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER U. THE GOOD NEIGHBOR SCHOLARSHIP PROGRAM

19 TAC §§21.634 - 21.642

The repeal is proposed under Texas Education Code, Section 54.331, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter U, §§21.634 - 21.642.

§21.634. Authority and Purpose.

§21.635. Definitions.

§21.636. Eligible Institutions.

§21.637. Eligible Students.

§21.638. Selection Procedures.

§21.639. Award Amount.

§21.640. Continuation Awards.

§21.641. Hardship Provisions.

§21.642. Dissemination of Information and Rules.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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For further information, please call: (512) 427-6365

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SUBCHAPTER Z. EXEMPTION FOR FIREFIGHTERS ENROLLED IN FIRE SCIENCE COURSES

19 TAC §§21.786 - 21.792

The repeal is proposed under Texas Education Code, Section 54.353, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter Z, §§21.786 - 21.792.

§21.786. Authority and Purpose.
§21.787. Definitions.
§21.788. Tuition and Laboratory Fee Exemption.
§21.789. Eligible Firefighters.
§21.790. Excess Hours.
§21.791. Degree and Certificate Programs and Courses Eligible for the Exemption.
§21.792. Hardship Provisions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
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For further information, please call: (512) 427-6365

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SUBCHAPTER AA. RECIPROCAL EDUCATIONAL EXCHANGE PROGRAM

19 TAC §§21.901 - 21.910

The repeal is proposed under Texas Education Code, Section 54.231, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter AA, §§21.901 - 21.910.

§21.901. Authority and Purpose.
§21.902. Definitions.
§21.903. Eligible Institution.
§21.904. Eligible Persons.
§21.905. Tuition Rate to be Paid.
§21.906. Reciprocity.
§21.907. Assurances.
§21.908. Formula Funding.
§21.909. Transcripts for Courses Taken Abroad.
§21.910. Reporting Requirements.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER BB. PROGRAMS FOR ENROLLING STUDENTS FROM MEXICO

19 TAC §§21.931 - 21.938

The repeal is proposed under Texas Education Code, Section 54.231, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter BB, §§21.931 - 21.938.

§21.931. Authority, Scope, and Purpose.
§21.932. Definitions.
§21.933. Eligible Institutions.
§21.934. Eligible Students for the Pilot Program.
§21.935. Eligible Students for the Border County Program.
§21.936. Tuition Rate to be Paid.
§21.937. Numbers of Students Eligible to Participate in the Programs.
§21.938. Reporting Requirements.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502428
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER EE. TEXAS NATIONAL STUDENT EXCHANGE PROGRAM

19 TAC §§21.990 - 21.994

The repeal is proposed under Texas Education Code, Section 51.930, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter EE, §§21.990 - 21.994.

§21.990. Authority and Purpose.
§21.991. Definitions.
§21.992. Eligible Students.

§21.993. Tuition Charges.

§21.994. Testing Waiver.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502429
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER II. EDUCATIONAL AIDE EXEMPTION PROGRAM

19 TAC §§21.1080 - 21.1089

The repeal is proposed under Texas Education Code, Section 54.363, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter II, §§21.1080 - 21.1089.

§21.1080. Authority and Purpose.

§21.1081. Definitions.

§21.1082. Institutions.

§21.1083. Eligible Students.

§21.1084. The Application.

§21.1085. Award Amounts.

§21.1086. Allocations for Institutions.

§21.1087. Exemption from Student Teaching.

§21.1088. Hardship Provisions.

§21.1089. Dissemination of Information and Rules.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502430
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER PP. PROVISIONS FOR UNIFORM STANDARDS FOR PUBLICATION OF COST OF ATTENDANCE INFORMATION

19 TAC §§21.2220 - 21.2222

The repeal is proposed under Texas Education Code, Section 61.0777, which provides the Coordinating Board with the authority to adopt rules relating to the publication of cost of attendance information.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter PP, §§21.2220 - 21.2222.

§21.2220. Authority and Purpose.

§21.2221. Definitions.

§21.2222. Internet Access to Cost Information.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502431
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER SS. WAIVER PROGRAMS FOR CERTAIN NONRESIDENT PERSONS

19 TAC §§21.2260 - 21.2263

The repeal is proposed under Texas Education Code, Section 54.213, which provides the Coordinating Board with the authority to adopt rules relating to the competitive scholarship waiver.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter SS, §§21.2260 - 21.2263.

§21.2260. Purpose.

§21.2261. Definitions.

§21.2262. Effective Date of this Subchapter.

§21.2263. Competitive Scholarships.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502432
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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SUBCHAPTER TT. EXEMPTION PROGRAM FOR DEPENDENT CHILDREN OF PERSONS WHO ARE MEMBERS OF ARMED FORCES DEPLOYED ON COMBAT DUTY

19 TAC §§21.2270 - 21.2276

The repeal is proposed under Texas Education Code, Section 54.2031, which provides the Coordinating Board with the authority to adopt rules as necessary relating to the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 1, Chapter 21, Subchapter TT, §§21.2270 - 21.2276.

§21.2270. Authority and Purpose.

§21.2271. Definitions.

§21.2272. Tuition Exemption for Children of Military Service Members Who Are Deployed.

§21.2273. Eligibility Requirements.

§21.2274. Impact on Admissions.

§21.2275. Reimbursement of Foregone Tuition.

§21.2276. Hardship Provisions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502433
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6365

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PART 9. TEXAS INNOVATIVE ADULT CAREER EDUCATION GRANT PROGRAM ADMINISTRATOR

CHAPTER 400. GRANT ADMINISTRATION

19 TAC §§400.1 - 400.7

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the repeal of Texas Administrative Code, Title 19, Part 9, Chapter 400, §§400.1 - 400.7, concerning Grant Administration. Specifically, this repeal will remove sections superseded by rules adopted by the Coordinating Board in April 2024 which are now in Part 1, Chapter 10, Subchapter RR, of this title.

Rules related to the Texas Innovative Adult Career Education Grant Program were adopted in Texas Administrative Code, Title 19, Part 1, following the transfer of grant administration from Austin Community College to the Coordinating Board, as authorized by House Bill 8, 88th Texas Legislature, Regular Session.

Dr. Jennielle Strother, Assistant Commissioner of Student Success, has determined that for each of the first five years the sections are in effect there would be no fiscal implications for state or local governments as a result of enforcing or administering the rules. There are no estimated reductions in costs to the state and to local governments as a result of enforcing or administering the rule. There are no estimated losses or increases in revenue to the state or to local governments as a result of enforcing or administering the rule.

There is no impact on small businesses, micro businesses, and rural communities. There is no anticipated impact on local employment.

Dr. Jennielle Strother, Assistant Commissioner for Student Success, has also determined that for each year of the first five years the section is in effect, the public benefit anticipated as a result of administering the section is to repeal rules superseded by new Part 1, Chapter 10, Subchapter RR, rules adopted by the Coordinating Board in April 2024. There are no anticipated economic costs to persons who are required to comply with the sections as proposed.

Government Growth Impact Statement

(1) the rules will not create or eliminate a government program;

(2) implementation of the rules will not require the creation or elimination of employee positions;

(3) implementation of the rules will not require an increase or decrease in future legislative appropriations to the agency;

(4) the rules will not require an increase or decrease in fees paid to the agency;

(5) the rules will not create a new rule;

(6) the rules will not limit an existing rule;

(7) the rules will not change the number of individuals subject to the rule; and

(8) the rules will not affect this state's economy.

Comments on the proposal may be submitted to Dr. Jennielle Strother, Assistant Commissioner for Student Success, P.O. Box 12788, Austin, Texas 78711-2788, or via email at studentsuccess@highered.texas.gov. Comments will be accepted for 30 days following publication of the proposal in the *Texas Register*.

The repeal is proposed under Texas Education Code, Section 136.007, which provides the Coordinating Board with the authority to adopt rules relating to the administration of the program.

The proposed repeal affects Texas Administrative Code, Title 19, Part 9, Chapter 400, Sections 400.1 - 400.7.

§400.1. Definitions.

§400.2. Program Advisory Board.

§400.3. Purpose of the Grant.

§400.4. Eligibility.

§400.5. General Guidelines.

§400.6. Evaluation.

§400.7. Reporting Requirements.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502434
Nichole Bunker-Henderson
General Counsel
Texas Innovative Adult Career Education Grant Program Administrator
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 427-6537

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TITLE 22. EXAMINING BOARDS

PART 22. TEXAS STATE BOARD OF PUBLIC ACCOUNTANCY

CHAPTER 511. ELIGIBILITY

SUBCHAPTER C. EDUCATIONAL REQUIREMENTS

22 TAC §511.51

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.51 concerning Educational Definitions.

Background, Justification and Summary.

Some schools use the term "upper level accounting or business courses" and others use the term "upper division accounting or business courses. This proposed amendment makes it clear that both are accepted as having the same meaning in the Board's rules.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

These proposed rule amendments clarify that the use of the terms upper level accounting or upper division accounting or business courses is considered the same for the purposes of these rules.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.51. Educational Definitions.

(a) The following words and terms extracted from rules promulgated by the Texas Higher Education Coordinating Board, shall have the following meanings for this chapter, unless the context clearly indicates otherwise.

(1) "Accelerated courses" means courses delivered in shortened semesters which are expected to have the same number of contact hours and the same requirement for out-of-class learning as courses taught in a normal semester.

(2) "Contact hour" means a time unit of instruction used by institutions of higher education consisting of 60 minutes, of which 50 minutes must be direct instruction.

(3) "Non-traditionally-delivered course" means a course that is offered in a non-traditional way and does not meet the definition of contact hours.

(4) "Semester" means and normally shall include 15 weeks for instruction and one week for final examination or a total of 16 weeks instruction and examination combined.

(5) "Semester credit hour" means a unit of measure of instruction consisting of 60 minutes, of which 50 minutes must be direct instruction, over a 15-week period in a semester system or a 10-week period in a quarter system.

(6) "Traditionally-delivered three semester-credit-hour course" or "traditional course" means a course containing 15 weeks of instruction (45 contact hours) plus a week for final examinations so that such a course contains 45-48 contact hours depending on whether there is a final exam.

(b) The following words and terms shall have the following meanings.

(1) "Recognized community college" means a Texas community college or campus of the community college that holds the designation 'Qualifying Educational Credit for the CPA Examination' awarded by the board.

(2) "Extension and correspondence school" means a program within an institution that offers courses that are not equivalent to courses offered in an academic department at the institution and the courses are not listed on an official transcript from the institution. (3) "Institution" or "Institution of Higher Education" means any U.S. public or private senior college or university which confers a baccalaureate or higher degree to its students completing a program of study required for the degree.

(4) "Independent study" means academic work selected or designed by the student with the pre-approval of the appropriate department or a college or university under faculty supervision. This work typically occurs outside of the regular classroom structure.

(5) "Internship" means faculty pre-approved and appropriately supervised short-term work experience, usually related to a student's major field of study, for which the student earns academic credit.

(6) "Proprietary organization" means a CPA review course provider.

(7) "Quarter credit hour" is the unit of measurement based upon an institution of higher education system that divides the academic year into three equal sessions of 10 to 11 weeks. A quarter credit hour represents proportionately less work than a semester hour because of the shorter session and is counted as 2/3 of a semester credit hour for each hour of credit.

(8) "Reporting institution" means the institution of higher education in the state that serves as the clearinghouse for educational institutions of higher education in Texas. Currently, the University of Texas-Austin is the reporting institution for the state of Texas.

(9) "SACS" means the Southern Association of Colleges and Schools-Commission on Colleges.

(10) "THECB" means the Texas Higher Education Coordinating Board.

(11) "Transcript," "Official Transcript" or "Official Educational Document" means a document prepared by an institution that contains a record of the academic coursework offered by an academic department that a student has taken, grades and credits earned, and degrees awarded. The document is printed on paper bearing a watermark specific to the institution and is embossed with the institution's seal, date and the signature of the Registrar who is responsible for certifying coursework and degrees. The document may be provided electronically from the institution or its authorized agent.

(12) "UCPAE" means the Uniform Certified Public Accountant Examination prepared and graded by the American Institute of Certified Public Accountants.

(13) "Upper Division Accounting Course" or "Upper Level Accounting Course" means at a minimum junior and senior year course work that requires the successful completion of introductory or basic course work before it can be taken.

(14) "Upper Division Business Course" or "Upper Level Business Course" means at a minimum junior and senior year course work that requires the successful completion of introductory or basic course work before it can be taken.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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22 TAC §511.52

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.52 concerning Recognized Institutions of Higher Education.

Background, Justification and Summary

The proposed amendment is a grammatical change.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

This proposed rule amendment grammatically reads better by referring to "The" Higher Learning Commission.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Ac-

countancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.52. Recognized Institutions of Higher Education.

(a) The board recognizes institutions of higher education that offer a baccalaureate or higher degree, that either:

(1) are accredited by one of the following organizations:

(A) Middle States Commission on Higher Education (MSCHE);

(B) Northwest Commission on Colleges and Universities (NWCCU);

(C) The Higher Learning Commission (HLC);

(D) New England Commission of Higher Education (NECHE);

(E) Southern Association of Colleges and Schools, Commission on Colleges (SACS); and

(F) WASC Senior College and University Commission; or

(2) provide evidence of meeting equivalent accreditation requirements of SACS.

(b) The board is the final authority regarding the evaluation of an applicant's education and has received assistance from the reporting institution in the State of Texas, the University of Texas at Austin, in evaluating:

(1) an institution of higher education;

(2) organizations that award credits for coursework taken outside of a traditional academic environment and shown on a transcript from an institution of higher education;

(3) assessment methods such as credit by examination, challenge exams, and portfolio assessment; and

(4) non-college education and training.

(c) The following organizations and assessment methods may not be used to meet the requirements of this chapter:

(1) American Council on Education (ACE);

(2) Prior Learning Assessment (PLA);

(3) Defense Activity for Non-Traditional Education Support (DANTES);

(4) Defense Subject Standardized Test (DSST); and

(5) StraighterLine.

(d) The board may accept courses completed through an extension school, a correspondence school or continuing education program provided that the courses are offered and accepted by the board approved educational institution for a business baccalaureate or higher degree conferred by that educational institution.

(e) Except as provided in subsection (d) of this section, extension and correspondence schools or programs and continuing education courses do not meet the criteria for recognized institutions of higher education.

(f) The requirements related to recognized community colleges are provided in §511.54 of this chapter (relating to Recognized Texas Community Colleges).

(g) The board may recognize a community college that offers a baccalaureate degree in accounting or business, provided that the applicant is admitted to a graduate program in accounting or business offered at a recognized institution of higher education that offers a graduate or higher degree.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
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Texas State Board of Public Accountancy
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22 TAC §511.53

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.53 concerning Evaluation of International Education Documents.

Background, Justification and Summary

The amendment proposes to relocate Board Rule §511.59 to Rule §511.56 for a better fit, eliminates Board Rule §511.60 which is outdated and no longer effective, and revises Board Rule §511.59 to provide for the 120-semester credit hour pathway to certification.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no

estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The proposed amendment reduces the costs and time for a candidate to become certified and provides the public with the benefit of needed accounting services.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.53. Evaluation of International Education Documents.

(a) It is the responsibility of the board to confirm that education obtained at colleges and universities outside of the United States (international education) is equivalent to education earned at board-recognized institutions of higher education in the U.S.

(b) The board shall use, at the expense of the applicant, the services of the University of Texas at Austin, Graduate and International Admissions Center, to validate, review, and evaluate international education documents submitted by an applicant to determine if the courses taken and degrees earned are substantially equivalent to those offered by the board-recognized institutions of higher education located in the U.S. The evaluation shall provide the following information to the board:

(1) Degrees earned by the applicant that are substantially equivalent to those conferred by a board-recognized institution of higher education in the U.S. that meets §511.52 of this chapter (relating to Recognized Institutions of Higher Education);

(2) The total number of semester hours or quarter hour equivalents earned that are substantially equivalent to those earned at U.S. institutions of higher education [~~and that meet §511.59 of this chapter (relating to Definition of 120 Semester Hours to take the UCPAE)~~];

(3) The total number of semester hours or quarter hour equivalents earned in accounting coursework that meets §511.57 of this chapter (relating to Courses in an Accounting Concentration to take the UCPAE [~~Qualified Accounting Courses to take the UCPAE) or §511.60 of this chapter (relating to Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE)~~];

(4) An analysis of the title and content of courses taken that are substantially equivalent to courses listed in §511.57 [~~or §511.60~~] of this chapter; and

(5) The total number of semester hours or quarter hour equivalents earned in business coursework that meets §511.58 of this chapter (relating to [~~Definitions of~~] Related Business Subjects to take the UCPAE).

(c) The University of Texas at Austin, Graduate and International Admissions Center, may use the American Association of Collegiate Registrars and Admissions Officers (AACRAO) material, including the Electronic Database for Global Education (EDGE), in evaluating international education documents.

(d) Other evaluation or credentialing services of international education are not accepted by the board.

(e) Credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:

(1) American College Education (ACE);

(2) Prior Learning Assessment (PLA);

(3) Defense Activity for Non-Traditional Education Support (DANTES);

(4) Defense Subject Standardized Test (DSST); and

(5) StraighterLine.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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J. Randel (Jerry) Hill
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22 TAC §511.54

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.54 concerning Recognized Texas Community Colleges.

Background, Justification and Summary

The amendment proposes to eliminate the no longer effective Board Rule §511.60, incorporates the statutory language "Courses in an Accounting Concentration to take the UCPAE" for certification, and to incorporate the three semester hour ethics course offered at community colleges for individuals studying to become certified through the 120-hour pathway.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

These proposed rule amendments recognize the three semester hour ethics course offered by community colleges for the purpose of certification by applicants through the 120-hour pathway or the 150-hour pathway to certification.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.54. Recognized Texas Community Colleges.

(a) An applicant who has completed a baccalaureate or higher degree from a board recognized institution of higher education based on the requirements of §511.52 of this chapter (relating to Recognized Institutions of Higher Education), may enter into a course of study at a board recognized Texas community college to complete the educational requirements of §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter (relating to Courses in an Accounting Concentration to take the UCPAE [~~Qualified Accounting Courses to take the UCPAE~~], and [~~Definitions of~~] Related Business Subjects to take the UCPAE[, ~~and~~

~~Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE~~]).

(b) The board recognizes and accepts Texas community colleges that meet board standards for a comprehensive academic program based on the educational requirements of §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter.

(c) Effective August 1, 2015, the standards include at a minimum all, but are not limited to, the following:

(1) The Texas community college must be accredited by SACS.

(2) Academic accounting and business courses recognized as meeting §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter are deemed by the board as equivalent to upper level coursework at an institution of higher education and must contain a rigorous curriculum that is similar to courses offered in a baccalaureate degree program at a university. Accounting, business, and ethics courses must be developed by a group of full time accounting faculty members and approved by the board prior to offering to students. Modifications to an approved course must be reconsidered by the board prior to offering to students.

(3) Academic courses meeting §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter must be taken after completing a baccalaureate degree.

(4) The Texas community college must offer no fewer than:

(A) 30 [~~27~~] semester hours of academic accounting courses meeting §511.57 [~~or §511.60~~] of this chapter;

(B) 21 [~~24~~] semester hours of academic business courses meeting §511.58 of this chapter; and

(C) a board-approved three semester hour ethics course meeting §511.59 of this chapter (relating to Qualifications for Issuance of a Certificate with not Fewer than 120 Semester Hours) or §511.164 of this chapter (relating to Qualifications for Issuance of a Certificate with not Fewer than 150 Semester Hours [~~Definition of 150 Semester Hours to Qualify for Issuance of a Certificate~~]).

(5) The Texas community college designates an accounting faculty member(s) who is responsible for:

(A) managing the comprehensive academic program at all campuses;

(B) selecting and training qualified faculty members to teach the program courses and regularly evaluating their effectiveness in the classroom;

(C) establishing and maintaining a rigorous program curriculum;

(D) establishing and maintaining a process for advising and guiding students through the program; and

(E) providing annual updates to the board on the status of the academic program.

(6) Faculty members at a community college recognized and accepted by the board must have the following credentials to teach academic courses meeting §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter:

(A) Doctorate or master's degree in the teaching discipline; or

(B) Master's degree with a concentration in the teaching discipline (a minimum of 18 graduate semester hours in the teaching discipline).

(7) At least three-fourths of the faculty members who are responsible to teach academic courses meeting §511.57 [~~or §511.60~~] of this chapter must hold a current CPA license.

(8) Faculty members will comply with the established educational definitions in §511.51 of this chapter (relating to Educational Definitions).

(9) The Texas community college will provide ongoing professional development for its faculty as teachers, scholars, and CPA practitioners.

(10) The Texas community college will make available to students a resource library containing current online authoritative literature to support the academic courses meeting §§511.57 and [,] 511.58[, ~~and 511.60~~] of this chapter, and will incorporate the online authoritative literature in accounting courses.

(d) A community college recognized and accepted by the board under this provision must be reconsidered by the board on the fifth-year anniversary of the approval. Information brought to the attention of the board by a student or faculty member of the Texas community college that indicates non-compliance with the standards may cause the board to accelerate reconsideration.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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22 TAC §511.56

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.56 concerning Educational Qualifications under the Act to take the UCPAE.

Background, Justification and Summary

The amendment proposes to publish the criteria for certification through July 31, 2026 and the criteria for the additional pathway created in the Public Accountancy Act effective August 1, 2026.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The proposed amendment clarifies to the public when applicants wishing to obtain certification through the new pathway with 120 semester credit hours takes effect.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is

not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.56. Educational Qualifications under the Act to take the UCPAE.

(a) An applicant for the UCPAE under the current Act shall meet the following educational requirements [~~at the time of filing the initial application to take the examination and~~] in order to qualify to take the examination:

(1) hold a baccalaureate or graduate degree conferred by an institution of higher education as defined by §511.52 of this chapter (relating to Recognized Institutions of Higher Education) recognized by the board; and

(2) complete no fewer than 120 semester hours or quarter-hour equivalents of courses[~~, as defined by §511.59 of this chapter (relating to Definition of 120 Semester Hours to take the UCPAE) and~~] consisting of:

(A) effective through July 31, 2026, no fewer than 21 semester hours or quarter-hour equivalents of upper level accounting courses as defined by §511.57 of this chapter (relating to Courses in an Accounting Concentration to take the UCPAE); [~~Qualified Accounting Courses to take the UCPAE) or §511.60 of this chapter (relating to Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE); and~~]

(B) effective August 1, 2026, no fewer than 24 semester hours or quarter-hour equivalents of upper level accounting courses as defined by §511.57 of this chapter; and

(C) [~~(B)~~] no fewer than 21 [~~24~~] semester hours or quarter-hour equivalents of upper level related business courses, as defined by §511.58 of this chapter (relating to [~~Definitions of~~] Related Business Subjects to take the UCPAE).

(b) An individual holding a baccalaureate degree conferred by a board-recognized institution of higher education, as defined by §511.52 of this chapter, and who has not completed the requirements of this section shall meet the requirements by taking coursework in one of the following ways:

(1) complete upper level or graduate courses at a board-recognized institution of higher education as defined in §511.52 of this chapter that meets the requirements of subsections (a)(2)(A) and (a)(2)(B) of this section; or

(2) enroll in a board-recognized community college as defined in §511.54 of this chapter (relating to Recognized Texas Community Colleges) and complete board approved accounting or business courses that meet the requirements of subsections (a)(2)(A) and (a)(2)(B) of this section. Only specified accounting and business courses that are approved by the board will be accepted as not all courses offered at a community college are accepted.

(c) The following courses, courses of study, certificates, and programs may not be used to meet the 120-semester hour requirement:

(1) remedial or developmental courses offered at an institution of higher education; and

(2) credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:

(A) American College Education (ACE);

(B) Prior Learning Assessment (PLA);

(C) Defense Activity for Non-Traditional Education Support (DANTES);

(D) Defense Subject Standardized Test (DSST); and

(E) StraighterLine.

(d) The hours from a course that has been repeated will be counted only once toward the requirements of subsection (a)(2) of this section.

(e) [~~(b)~~] An applicant for the UCPAE who met the educational requirements of the Act that were in effect at the time of taking the initial examination shall continue to be examined under those requirements unless the applicant chooses to meet the current education requirements of the Act.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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22 TAC §511.57

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.57 concerning Qualified Accounting Courses to take the UCPAE.

Background, Justification and Summary

The amendment proposes to eliminate the no longer effective Board Rule §511.60 and incorporates the dates for existing criteria for certification and the added criteria for the new pathway toward certification.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The proposed amendment helps the public understand the criteria for certification prior to August 1, 2026 and the effective date of the additional criteria beginning on August 1, 2026.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.57. Courses in an Accounting Concentration to Take the UCPAE [~~Qualified Accounting Courses to take the UCPAE~~].

(a) Effective through July 31, 2026, an [~~An~~] applicant shall meet the board's accounting course requirements in one of the following ways:

(1) Hold a baccalaureate or higher degree from a board-recognized institution of higher education as defined by §511.52 of this chapter (relating to Recognized Institutions of Higher Education) and present official transcript(s) from board-recognized institution(s) that show degree credit for no fewer than 21 semester credit hours of upper

division accounting courses as defined in subsections (d) and (e)[, ~~(f) and (g)~~] of this section; or

(2) Hold a baccalaureate or higher degree from a board-recognized institution of higher education as defined by §511.52 of this chapter, and after obtaining the degree, complete the requisite 21 semester credit hours of upper division accounting courses, as defined in subsections (d) and (e)[, ~~(f) and (g)~~] of this section, from four-year degree granting institutions, or accredited community colleges, provided that all such institutions are recognized by the board as defined by §511.52 or §511.54 of this chapter (relating to Recognized Texas Community Colleges).

(b) Credit for hours taken at board-recognized institutions of higher education using the quarter system shall be counted as 2/3 of a semester credit hour for each hour of credit received under the quarter system.

(c) The board will accept no fewer than 21 semester credit hours of accounting courses from the courses listed in subsections (d) and (e)[, ~~(f) and (g)~~] of this section. The hours from a course that has been repeated will be counted only once toward the required 21 semester hours. The courses must meet the board's standards by containing sufficient accounting knowledge and application to be useful to candidates taking the UCPAE. A board-recognized institution of higher education must have accepted the courses for purposes of obtaining a baccalaureate or higher degree or its equivalent, and they must be shown on an official transcript.

~~[(d) Upper level accounting coursework recognized by the board and in effect prior to January 1, 2024, may be found in §511.60 of this chapter (relating to Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE).]~~

(d) The [~~(e) Effective January 1, 2024, the~~] subject-matter content should be derived from the UCPAE Blueprint. A minimum of 12 semester hours with at least three semester hours in each of the following accounting course content areas is required:

(1) financial accounting and reporting for business organizations or intermediate accounting;

(2) financial statement auditing;

(3) taxation; and

(4) accounting information systems or accounting data analytics.

(e) A [~~(f) Effective January 1, 2024, a~~] minimum of 9 hours in any of the following accounting course content areas is required:

(1) up to 6 semester credit hours of additional financial accounting and reporting for business organizations or intermediate accounting;

(2) advanced accounting;

(3) accounting theory;

(4) managerial or cost accounting (excluding introductory level courses);

(5) auditing and attestation services;

(6) internal accounting control and risk assessment;

(7) financial statement analysis;

(8) accounting research and analysis;

(9) up to 9 semester credit hours of taxation (including tax research and analysis);

(10) financial accounting and reporting for governmental and/or other nonprofit entities;

(11) up to 9 semester credit hours of accounting information systems, including management information systems ("MIS"), provided the MIS courses are listed or cross-listed as accounting courses, and the institution of higher education accepts these courses as satisfying the accounting course requirements for graduation with a degree in accounting;

(12) up to 9 semester credit hours of accounting data analytics, provided the institution of higher education accepts these courses as satisfying the accounting course requirements for graduation with a degree in accounting; business data analytics may be considered provided the courses are listed or cross-listed as accounting courses, and the institution of higher education accepts these courses as satisfying the accounting course requirements for graduation with a degree in accounting; (while data analytics tools may be taught in the courses, application of the tools should be the primary objective of the courses);

(13) fraud examination;

(14) international accounting and financial reporting;

(15) mergers and acquisitions;

(16) financial planning;

(17) at its discretion, the board may accept up to three semester hours of credit of accounting course work with substantial merit in the context of a career in public accounting, provided the course work is predominantly accounting or auditing in nature but not included in paragraphs (1) - (16) of this subsection. For any course submitted under this provision, the Accounting Faculty Head or Chair must affirm to the board in writing the course's merit and content; and

(18) at its discretion, the board may accept up to three semester credit hours of independent study in accounting selected or designed by the student under faculty supervision. The curriculum for the course shall not repeat the curriculum of another accounting course that the student has completed.

(f) [~~(g)~~] The following types of introductory courses do not meet the accounting course definition in subsections (d) and (e) [~~and (f)~~] of this section:

(1) elementary accounting;

(2) principles of accounting;

(3) financial and managerial accounting;

(4) introductory accounting courses; and

(5) accounting software courses.

(g) [~~(h)~~] Any CPA review course offered by an institution of higher education or a proprietary organization shall not be used to meet the accounting course definition.

(h) [~~(i)~~] CPE courses shall not be used to meet the accounting course definition.

(i) [~~(j)~~] An ethics course required in §511.164 of this chapter (relating to Qualifications for Issuance of a Certificate with not Fewer than 150 Semester Hours) [~~§511.58(d) of this chapter (relating to Definitions of Related Business Subjects to take the UCPAE) shall not be used to meet the accounting course definition in subsections (e) and (f) of this section~~].

(j) [~~(k)~~] Accounting courses completed through an extension school of a board recognized educational institution may be accepted

by the board provided that the courses are accepted for a business baccalaureate or higher degree conferred by that educational institution.

(k) [~~(l)~~] The board may review the content of accounting courses and determine if they meet the requirements of this section.

(l) [~~(m)~~] Credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:

(1) American College Education (ACE);

(2) Prior Learning Assessment (PLA);

(3) Defense Activity for Non-Traditional Education Support (DANTES);

(4) Defense Subject Standardized Test (DSST); and

(5) Straighterline.

(m) Effective August 1, 2026, to take the UCPAE, a minimum of 12 semester hours of upper level accounting courses, with at least three semester hours from each of subparagraphs (1) through (4) of this subsection, must be completed at a board-recognized institution of higher education and shown on an official transcript from the institution:

(1) financial accounting and reporting for business organizations or intermediate accounting;

(2) financial statement auditing;

(3) taxation; and

(4) accounting information systems or accounting data analytics.

(n) In addition to subsection (m) of this section, a minimum of 12 hours in any of the following upper level accounting course content areas must be completed at a board-recognized institution of higher education and shown on an official transcript from the institution, provided the course was not used to meet subsection (a) of this section:

(1) financial accounting and reporting for business organizations or intermediate accounting;

(2) advanced accounting;

(3) accounting theory;

(4) managerial or cost accounting (excluding introductory level courses);

(5) auditing and attestation services;

(6) internal accounting control and risk assessment;

(7) financial statement analysis;

(8) accounting research and analysis;

(9) taxation (including tax research and analysis);

(10) financial accounting and reporting for governmental and/or other nonprofit entities;

(11) accounting information systems, including management information systems ("MIS"), provided the MIS courses are listed or cross-listed as accounting courses, and the institution of higher education accepts these courses as satisfying the accounting course requirements for graduation with a degree in accounting;

(12) accounting data analytics;

(13) fraud examination;

(14) international accounting and financial reporting;

(15) mergers and acquisitions;

(16) financial planning; and

(17) up to three semester credit hours of independent study in accounting selected or designed by the student under faculty supervision. The curriculum for the course shall not repeat the curriculum of another accounting course that the student has completed.

(o) The board may review the content of accounting courses to determine if they meet the requirements of subsections (m) and (n) of this section, and to determine if courses contain sufficient accounting knowledge and application to be useful to candidates taking the UCPAE.

(p) A course that was repeated will be counted only once to meet the requirements of subsections (m) and (n) of this section.

(q) Credit for hours taken at board-recognized institutions of higher education using the quarter system shall be counted as 2/3 of a semester credit hour for each hour of credit received under the quarter system.

(r) The board may accept up to three semester hours of credit of accounting course if:

(1) the course work has substantial merit in the context of a career in public accounting;

(2) the course work is predominantly accounting or auditing in nature but not included in subsections (m) and (n) of this section; and

(3) the merit and content of the course submitted under this subsection is affirmed by the Accounting Faculty Head or Chair at the educational institution where the course was completed.

(s) The following types of courses do not meet the accounting course definition in subsections (m), (n) and (r) of this section:

(1) elementary accounting;

(2) principles of accounting;

(3) financial and managerial accounting;

(4) introductory accounting courses;

(5) accounting software courses;

(6) any CPA review course offered by an institution of higher education or a proprietary organization;

(7) CPE courses; and

(8) an ethics course required in §511.59 of this chapter (relating to Qualifications for Issuance of a Certificate with not Fewer than 120 Semester Hours) or §511.164 of this chapter (relating to Qualifications for Issuance of a Certificate with not Fewer than 150 Semester Hours).

(t) Accounting courses completed through an extension school of a board-recognized educational institution may be accepted by the board provided that the courses are accepted for a business baccalaureate or higher degree conferred by that educational institution.

(u) Credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:

(1) American College Education (ACE);

(2) Prior Learning Assessment (PLA);

(3) Defense Activity for Non-Traditional Education Support (DANTES);

(4) Defense Subject Standardized Test (DSST); and

(5) Straighterline.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502478
J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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22 TAC §511.58

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.58 concerning Definitions of Related Business Subjects to take the UCPAE.

Background, Justification and Summary

The amendment proposes to require at least 21 hours of upper level courses to sit for the UCPAE with no more than six credit hours in any of the listed subjects and a course that is repeated may only be counted as once toward the 21-hour requirement.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

These proposed rule amendments notifies the public of the criteria for certification regarding the 21 hours of upper level courses required to sit for the UCPAE.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.58. [~~Definitions of~~] Related Business Subjects to take the UCPAE.

(a) Related business courses are those business courses that a board recognized institution of higher education accepts for a business baccalaureate or higher degree by that educational institution.

(b) The board will accept no fewer than 21 credit hours of upper level courses (for the purposes of this subsection, economics and statistics at any college level will count as upper level courses) as related business subjects, taken at a recognized educational institution shown on official transcripts or accepted by a recognized educational institution for purposes of obtaining a baccalaureate degree or its equivalent, in the following areas. No more than 6 credit semester hours taken in any of the following subject areas may be used to meet the minimum hour requirement:

(1) business law, including study of the Uniform Commercial Code;

(2) economics;

(3) management;

(4) marketing;

(5) business communications;

(6) statistics and quantitative methods;

(7) information systems or technology;

(8) finance and financial planning;

(9) data analytics, data interrogation techniques, cyber security and/or digital acumen in the accounting context;

(10) upper level business or accounting internship; and

(11) other areas related to accounting.

[(b) An individual who holds a baccalaureate or higher degree from a recognized educational institution as defined by §511.52 of this chapter (relating to Recognized Institutions of Higher Education) may take related business courses from four-year degree granting institutions, or recognized community colleges, provided that all such institutions are recognized by the board as defined by §511.52 or §511.54 of this chapter (relating to Recognized Texas Community Colleges). Related business courses taken at a recognized community college are only the courses that the board has reviewed and approved to meet this section.]

(c) The board may review the content of business courses and determine if they meet the requirements of this section.

[(c) The board will accept no fewer than 24 semester credit hours of upper level courses (for the purposes of this subsection, economics and statistics at any college level will count as upper division courses) as related business subjects (without repeat), taken at a recognized educational institution shown on official transcripts or accepted by a recognized educational institution for purposes of obtaining a baccalaureate degree or its equivalent, in the following areas.]

[(1) No more than 6 credit semester hours taken in any of the following subject areas may be used to meet the minimum hour requirement:]

[(A) business law, including study of the Uniform Commercial Code;]

[(B) economics;]

[(C) management;]

[(D) marketing;]

[(E) business communications;]

[(F) statistics and quantitative methods;]

[(G) information systems or technology; and]

[(H) other areas related to accounting.]

[(2) No more than 9 credit semester hours taken in any of the following subject areas may be used to meet the minimum hour requirement:]

[(A) finance and financial planning; and]

[(B) data analytics, data interrogation techniques, cyber security and/or digital acumen in the accounting context, whether taken in the business school or in another college or university program, such as the engineering, computer science, information systems, or math programs (while data analytic tools may be used in the course, application of the tools should be the primary objective of the course).]

[(d) The board requires that a minimum of 2 upper level semester credit hours in accounting communications or business communications with an intensive writing curriculum be completed. The semester hours may be obtained through a standalone course or offered through an integrated approach. If the course content is offered through integration, the university must advise the board of the course(s) that contain the accounting communications or business communications content. The course may be used toward the 24 semester credit hours of upper level business courses listed in subsection (c)(1) of this section.]

(d) [(e)] Credit for hours taken at recognized institutions of higher education using the quarter system shall be counted as 2/3 of a semester hour for each hour of credit received under the quarter system.

(e) A course that was repeated will be counted only once to meet the requirements of this section.

(f) Related business courses completed through and offered by an extension school, correspondence school, or continuing education program of a board recognized educational institution may be accepted by the board, provided that the courses are accepted for a business baccalaureate or higher degree conferred by that educational institution.

[(g) The board may review the content of business courses and determine if they meet the requirements of this section.]

(g) [(h)] Credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:

(1) American College Education (ACE);

(2) Prior Learning Assessment (PLA);

(3) Defense Activity for Non-Traditional Education Support (DANTES);

(4) Defense Subject Standardized Test (DSST); and

(5) StraighterLine.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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22 TAC §511.59

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.59 concerning Definitions of 120 Semester Hours to take the UCPAE.

Background, Justification and Summary

The amendment proposes to establish the criteria for certification with the 120-hour pathway effective August 1, 2026. It requires 27 upper level hours of accounting courses and a three-semester

hour board-approved standalone course in accounting or business ethics taken at a board-recognized educational institution.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

These proposed rule amendments assist the public in understanding the minimum requirements for certification under the 120-hour pathway to certification.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.59. Qualifications for Issuance of a Certificate with not Fewer than 120 Semester Hours [~~Definitions of 120 Semester Hours to take the UCPAE~~].

(a) Effective August 1, 2026, an initial applicant who meets the education requirements of §§511.56, 511.57 and 511.58 of this chapter (relating to Educational Qualifications under the Act to take the UCPAE, Courses in an Accounting Concentration to take the UCPAE, and Related Business Subjects to take the UCPAE), and elects to take the UCPAE may qualify for CPA certification by completing the requirements in subsections (b) and (c) of this section.

(b) An applicant for CPA certification under this section shall complete the following additional education requirements:

(1) additional upper level accounting courses as defined by §511.57 of this chapter equals or exceeds 27 semester hours or quarter-hour equivalents of upper level accounting courses; and

(2) a three-semester hour board-approved standalone course in accounting or business ethics. The course must be taken at a board-recognized educational institution and should provide students with a framework of ethical reasoning, professional values, and attitudes for exercising professional skepticism, and other behavior in the best interest of the public and profession. The ethics course shall:

(A) include the ethics rules of the AICPA, the SEC, and the board;

(B) provide a foundation for ethical reasoning, including the core values of integrity, objectivity, and independence; and

(C) be taught by an instructor who has not been disciplined by the board for a violation of the board's rules of professional conduct, unless that violation has been waived by the board.

(c) The work experience shall be not fewer than two years of full time, non-routine accounting experience as defined by §§511.122 and 511.123 of this chapter (relating to Acceptable Work Experience and Reporting Work Experience) and supervised by a CPA as defined by §511.124 of this chapter (relating to Acceptable Supervision).

~~[(a) To be eligible to take the UCPAE, an applicant must hold at a minimum a baccalaureate degree, conferred by a board-recognized institution of higher education as defined by §511.52 of this chapter (relating to Recognized Institutions of Higher Education), and have completed the board-recognized coursework identified in this section:]~~

~~[(1) no fewer than 21 semester hours or quarter-hour equivalents of upper level accounting courses as defined by §511.57 of this~~

~~chapter (relating to Qualified Accounting Courses) or §511.60 of this chapter (relating to Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE);~~]

[~~(2) no fewer than 24 semester hours or quarter-hour equivalents of upper level related business courses, as defined by §511.58 of this chapter (relating to Definitions of Related Business Subjects to take the UCPAE); and~~]

[~~(3) academic coursework at an institution of higher education as defined by §511.52 of this chapter, when combined with paragraphs (1) and (2) of this subsection meets or exceeds 120 semester hours.~~]

[~~(b) An individual holding a baccalaureate degree conferred by a board-recognized institution of higher education, as defined by §511.52 of this chapter, and who has not completed the requirements of this section shall meet the requirements by taking coursework in one of the following ways:~~]

[~~(1) complete upper level or graduate courses at a board recognized institution of higher education as defined in §511.52 of this chapter that meets the requirements of subsection (a)(1) and (2) of this section; or~~]

[~~(2) enroll in a board recognized community college as defined in §511.54 of this chapter (relating to Recognized Texas Community Colleges) and complete board approved accounting or business courses that meet the requirements of subsection (a)(1) and (2) of this section. Only specified accounting and business courses that are approved by the board will be accepted as not all courses offered at a community college are accepted.~~]

[~~(c) The following courses, courses of study, certificates, and programs may not be used to meet the 120-semester hour requirement:~~]

[~~(1) any CPA review course offered by an institution of higher education or a proprietary organization;~~]

[~~(2) remedial or developmental courses offered at an educational institution; and~~]

[~~(3) credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirements of this chapter:~~]

[~~(A) American College Education (ACE);~~]

[~~(B) Prior Learning Assessment (PLA);~~]

[~~(C) Defense Activity for Non-Traditional Education Support (DANTES);~~]

[~~(D) Defense Subject Standardized Test (DSST); and~~]

[~~(E) StraighterLine.~~]

[~~(d) The hours from a course that has been repeated will be counted only once toward the required 120 semester hours.~~]

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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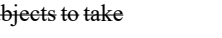

22 TAC §511.60

The Texas State Board of Public Accountancy (Board) proposes the repeal of §511.60 concerning Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE.

Background, Justification and Summary

The repeal deletes Board Rule §511.60 which automatically expired by board rule on January 1, 2024.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed repeal is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the repeal.

Public Benefit

The proposed repeal makes it clear to the public that the rule is no longer applicable to certification.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the repeal and a Local Employment Impact Statement is not required because the proposed repeal will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed repeal will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the repeal does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the repeal is in effect, the proposed repeal: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule repeal.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Ac-

countancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed repeal will have an adverse economic effect on small businesses. If the proposed repeal is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the repeal, describe and estimate the economic impact of the repeal on small businesses, offer alternative methods of achieving the purpose of the repeal; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed repeal is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The repeal is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed repeal.

§511.60. Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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SUBCHAPTER H. CERTIFICATION

22 TAC §511.164

The Texas State Board of Public Accountancy (Board) proposes an amendment to §511.164 concerning Definition of 150 Semester Hours to Qualify for Issuance of a Certificate.

Background, Justification and Summary

These revisions propose to clarify the criteria for certification with 150 approved semester hours and the criteria effective beginning August 1, 2026.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment. It also describes acceptable work experience.

Public Benefit

The public will have better clarity as what criteria is acceptable for certification prior to August 1, 2026 and what is acceptable following August 1, 2026.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board

may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§511.164. Qualification for Issuance of a Certificate with not Fewer than 150 Semester Hours [~~Definition of 150 Semester Hours to Qualify for Issuance of a Certificate~~].

(a) To qualify for the issuance of a CPA certificate, an applicant must hold at a minimum a baccalaureate degree, conferred by a board-recognized institution of higher education as defined by §511.52 of this chapter (relating to Recognized Institutions of Higher Education), and have completed the board-recognized coursework identified in paragraphs (1), or (2), and (3)- (6) of this section:

(1) effective through July 31, 2026, no fewer than 27 semester hours or quarter-hour equivalents of upper level accounting courses as defined by §511.57 of this chapter (relating to Courses in an Accounting Concentration to take the UCPAE) to include a minimum of two semester credit hours in research and analysis; [~~Qualified Accounting Courses to take the UCPAE) or §511.60 of this chapter (relating to Qualified Accounting Courses Prior to January 1, 2024 to take the UCPAE) to include a minimum of two semester credit hours in research and analysis;~~]

(2) Effective August 1, 2026, no fewer than 30 semester hours or quarter-hour equivalents of upper level accounting courses as defined by §511.57 of this chapter;

(3) [~~(2)~~] no fewer than 21 [~~24~~] semester hours or quarter-hour equivalents of upper level related business courses, as defined by §511.58 of this chapter (relating to [~~Definitions of~~] Related Business Subjects to take the UCPAE);

(4) [~~(3)~~] a three semester hour board-approved standalone course in accounting or business ethics. The course must be taken at a board-recognized educational institution and should provide students with a framework of ethical reasoning, professional values, and attitudes for exercising professional skepticism and other behavior in the best interest of the public and profession. The ethics course shall:

(A) include the ethics rules of the AICPA, the SEC, and the board;

(B) provide a foundation for ethical reasoning, including the core values of integrity, objectivity, and independence; and

(C) be taught by an instructor who has not been disciplined by the board for a violation of the board's rules of professional conduct, unless that violation has been waived by the board; [~~and~~]

(5) although not required to meet subsection (a)(6) of this section, the board may accept not more than six hours or quarter hour equivalents of upper level CPA review coursework completed at an institution of higher education; and

(6) [~~(4)~~] academic coursework at an institution of higher education as defined by §511.52 of this chapter, when combined with paragraphs (1) - (5) [~~(3)~~] of this subsection meets or exceeds 150 semester hours[~~, of which 120 semester hours meets the education requirements defined by §511.59 of this chapter (relating to Definition of 120 Semester Hours to take the UCPAE)~~]. An applicant who has met paragraphs (1) - (4) [~~(3)~~] of this subsection may use a maximum of 9 total semester credit hours of undergraduate or graduate independent study and/or internships as defined in §511.51(b)(4) or §511.51(b)(5) of this chapter (relating to Educational Definitions) to meet this paragraph. The courses shall consist of:

(A) a maximum of three semester credit hours of independent study courses; and

(B) a maximum of six semester credit hours of accounting/business course internships.

(b) The following courses, courses of study, certificates, and programs may not be used to meet the 150 semester hour requirement:

[~~(1) any CPA review course offered by an institution of higher education or a proprietary organization;~~]

(1) [~~(2)~~] remedial or developmental courses offered at an educational institution; and

(2) [~~(3)~~] credits awarded for coursework taken through the following organizations and shown on a transcript from an institution of higher education may not be used to meet the requirement of this chapter:

(A) American College Education (ACE);

(B) Prior Learning Assessment (PLA);

(C) Defense Activity for Non-Traditional Education Support (DANTES);

(D) Defense Subject Standardized Test (DSST); and

(E) StraighterLine.

(c) The hours from a course that has been repeated will be counted only once toward the required semester hours.

(d) The work experience shall be not fewer than one year of full time non-routine accounting experience as defined by §§511.122 and 511.123 of this chapter (relating to Acceptable Work Experience and Reporting Work Experience) and supervised by a CPA as defined by §511.124 of this chapter (relating to Acceptable Supervision).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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CHAPTER 512. CERTIFICATION BY RECIPROCITY

22 TAC §512.1

The Texas State Board of Public Accountancy (Board) proposes an amendment to §512.1 concerning Certification as a Certified Public Accountant by Reciprocity.

Background, Justification and Summary

The National Qualifications Appraisal Services (NQAS) of NASBA has had the responsibility to determine if another jurisdiction has substantially equivalent licensing requirements as Texas. That responsibility has been removed from the Texas *Public Accountancy Act* during the recent legislative session by SB 522. The proposed revisions to *§512.1* reflect that legislative revision.

In the absence of NQAS, language is provided that a candidate for reciprocity must comply with all requirements for licensing by reciprocity except the requirement of passing the CPA exam again.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

These proposed rule revisions reflect changes to the *Public Accountancy Act* and will update the public on the legislative changes.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§512.1. Certification as a Certified Public Accountant by Reciprocity.

(a) The certificate of a "certified public accountant" shall be granted by reciprocity to an applicant who is qualified under §901.259 of the Act (relating to Certification Based on Reciprocity) or §901.260 of the Act (relating to Certificate Based on Foreign Credentials) and lacks a history of dishonest or felonious acts and any criminal activity that might be relevant to the applicant's qualifications as provided for in §901.253 of the Act (relating to Background Investigation). The applicant must provide in the application for reciprocity the names of all the jurisdictions in which the applicant is or has been certified and/or licensed and all disciplinary actions taken or pending in those jurisdictions.

(b) Each applicant shall submit to the Department of Public Safety a complete and legible set of fingerprints from a vendor approved by the Department of Public Safety in conjunction with the application for the purpose of obtaining criminal history record information.

(c) An applicant from a domestic jurisdiction demonstrates that he meets the requirements for certification by reciprocity by:

(1) satisfying at least one of the following conditions:

~~[(A) the applicant holds a certificate or license to practice public accountancy from a domestic jurisdiction that has been determined by the board pursuant to §512.2 of this chapter (relating to NASBA Verified Substantially Equivalent Jurisdictions) as having substantially equivalent requirements for certification; or]~~

~~[(B) the applicant holds a certificate or license to practice public accountancy from a domestic jurisdiction that has not been determined by NASBA and the board to have substantially equivalent certification requirements but has had his education, examination and experience verified as substantially equivalent to those required by the UAA by NASBA; or]~~

(A) [(C)] the applicant meets all requirements for issuance of a certificate in this state other than the requirement providing the grades necessary to pass the uniform CPA examination; [set forth in the Act; or]

(B) [(D)] the applicant met the requirements in effect for issuance of a certificate in this state on the date the applicant was issued a certificate or license by another domestic jurisdiction; or

(C) [(E)] after passing the UCPAE, the applicant has completed at least four years of experience practicing public accountancy within the ten year period immediately preceding the date of application in this state; and

(2) meeting CPE requirements applicable to certificate holders contained in Chapter 523 of this title (relating to Continuing Professional Education).

(d) An applicant from a foreign jurisdiction demonstrates that he meets the requirements for certification by reciprocity by:

(1) holding a credential that has not expired or been revoked, suspended, limited or probated, and that entitles the holder to issue reports on financial statements issued by a licensing authority or professional accountancy body of another country that:

(A) regulates the practice of public accountancy and whose requirements to obtain the credential have been determined by the board to be substantially equivalent to the requirements of education, examination and experience contained in the Act; and

(B) grants credentials by reciprocity to applicants certified to practice public accountancy by this state;

(2) receiving that credential based on education and examination requirements that were comparable to or exceeded those required by the Act at the time the credential was granted;

(3) completing an experience requirement in the foreign jurisdiction that issued the credential that is comparable to or exceeds the experience requirement of the Act or has at least four years of professional accounting experience in this state;

(4) passing an international qualifying examination (IQEX) covering national standards that has been approved by the board; and

(5) passing an examination that has been approved by the board covering the rules of professional conduct in effect in this state.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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22 TAC §512.2

The Texas State Board of Public Accountancy (Board) proposes the repeal of §512.2 concerning NASBA Verified Substantially Equivalent Jurisdictions.

Background, Justification and Summary

The Board is proposing the language in §512.2 that addresses the role of the National Qualifications Appraisal Services to be repealed since that responsibility has been removed by the Texas Legislature.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed repeal is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the repeal.

Public Benefit

The adoption of the proposed repeal will make it clear to the public that a non-CPA owner must be a Texas resident in order to have an ownership in a CPA firm.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the repeal and a Local Employment Impact Statement is not required because the proposed repeal will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed repeal will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the repeal does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the repeal is in effect, the proposed repeal: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed repeal.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the repeal is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed repeal will have an adverse economic effect on small businesses. If the proposed repeal is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the repeal, describe and estimate the economic impact of the repeal on small businesses, offer alternative methods of achieving the purpose of the repeal; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed repeal is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The repeal is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed repeal.

§512.2. NASBA Verified Substantially Equivalent Jurisdictions.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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22 TAC §512.4

The Texas State Board of Public Accountancy (Board) proposes an amendment to §512.4 concerning Application for Certification by Reciprocity.

Background, Justification and Summary

With the removal of the responsibility of determining the substantial equivalency of out of state regulatory programs from the National Qualifications Appraisal Services, language is being removed from §512.4 to reflect that legislative directive.

Language is also added to require the verification of the education, and experience of an out of state licensee as well as the status of the license from the licensee's regulatory authority. This is the result of removing NQAS responsibility.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will provide the public with the news standards for licensing by reciprocity.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§512.4. Application for Certification by Reciprocity.

(a) An applicant seeking certification by reciprocity must apply for certification on a form prescribed by the board. The application must be accompanied by the requisite fee and shall include written authorization from the applicant empowering the board to obtain all information concerning the applicant's qualifications and present standing.

(b) An applicant for certification by reciprocity from a domestic jurisdiction [~~that has not been approved as being substantially equivalent by both NASBA and the board~~] must submit the following along with the completed application form and requisite fee to be processed:

(1) verification of the education and experience required from the domestic jurisdiction of origin upon applicant's certification [~~an interstate exchange of information form documenting the credits under the domestic jurisdiction of origin~~];

(2) verification of license status in any domestic jurisdiction where the applicant is or has been licensed as a CPA;

(3) [~~(2)~~] an executed oath of office stating support of the Constitutions of the United States and of the State of Texas and their laws and the rules of the board;

(4) [~~(3)~~] evidence of completion of an examination on the board's Rules of Professional Conduct;

(5) [~~(4)~~] evidence of completion of 120 credits of CPE during the last three years, including a board-approved four-credit ethics course; in compliance with Chapter 523 of this title (relating to Continuing Professional Education);

(6) [~~(5)~~] evidence of completion of the board's procedure to investigate the background of applicants in accordance with the established fingerprint process that accesses the Federal Bureau of Investigation (FBI) database and the Texas Department of Public Safety - Crime Records division files in order to ensure the applicant lacks a history of dishonest or felonious acts and for the board to be aware of any criminal activity that might be relevant to the applicant's qualifications; and

(7) [~~(6)~~] any other information requested by the board.

[~~(c) An applicant for certification by reciprocity from a domestic jurisdiction that has been approved as being substantially equivalent by both NASBA and the board must submit the following along with the completed application form and requisite fee to be processed:~~]

[~~(1) a certificate of good standing as a CPA from a domestic jurisdiction approved by both NASBA and the board as being substantially equivalent;~~]

[~~(2) if requested, a certificate of verification of substantial equivalency of the domestic jurisdiction of origin from NASBA;~~]

[~~(3) an executed oath of office stating support of the Constitutions of the United States and of the State of Texas and their laws and the rules of the board;~~]

[~~(4) evidence of completion of an examination on the board's Rules of Professional Conduct;~~]

[~~(5) evidence of completion of 120 credits of CPE during the last three years, including a board-approved four-credit ethics course; in compliance with Chapter 523 of this title (relating to Continuing Professional Education);~~]

[~~(6) evidence of completion of the board's procedure to investigate the background of applicants in accordance with the established fingerprint process that accesses the Federal Bureau of Investigation (FBI) database and the Texas Department of Public Safety - Crime Records division files in order to ensure the applicant lacks a history of dishonest or felonious acts and for the board to be aware of any criminal activity that might be relevant to the applicant's qualifications; and~~]

[~~(7) any other information requested by the board.~~]

(c) [~~(d)~~] An applicant for certification by reciprocity from a foreign jurisdiction that has been approved as being substantially equivalent by both U.S. IQAB and the board must submit the following along with the completed application form and requisite fee to be processed:

(1) a certificate of good standing of credentials to practice public accountancy from the foreign jurisdiction of origin;

(2) an executed oath of office stating support of the Constitutions of the United States and of the State of Texas and their laws and the rules of the board;

(3) evidence of a passing grade on the IQEX;

(4) evidence of a passing grade on a board approved examination on the board's Rules of Professional Conduct;

(5) evidence of the completion of a board-approved four-credit ethics course;

(6) evidence of completion of the board's procedure to investigate the background of applicants in accordance with the established fingerprint process that accesses the Federal Bureau of Investigation (FBI) database and the Texas Department of Public Safety - Crime Records division files in order to ensure the applicant lacks a history of dishonest or felonious acts and for the board to be aware of any criminal activity that might be relevant to the applicant's qualifications; and

(7) any other information requested by the board.

(d) [~~(e)~~] All correspondence and supporting documentation submitted to the board shall be in English or accompanied by a certified translation into English of such documents.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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CHAPTER 513. REGISTRATION
SUBCHAPTER B. REGISTRATION OF CPA FIRMS

22 TAC §513.11

The Texas State Board of Public Accountancy (Board) proposes an amendment to §513.11 concerning Qualifications for Non-CPA Owners of Firm License Holders.

Background, Justification and Summary

The Board is proposing a revision to *§513.11* to make it clear that a non-CPA firm owner must be a Texas resident. This is a statutory requirement.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will make the requirement for non-CPA ownership to be a Texas resident clear.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§513.11. Qualifications for Non-CPA Owners of Firm License Holders.

(a) A firm which includes non-CPA owners may not qualify for a firm license unless every non-CPA individual who is a Texas resident [~~an~~] owner of the firm:

(1) is actively providing personal services in the nature of management of some portion of the firm's business interests or performing services for clients of the firm or an affiliated entity;

(2) lacks a history of dishonest or felonious acts or any criminal activity that might be relevant to the applicant's qualifications; and

(3) is not a suspended or revoked licensee or certificate holder excluding those licensees that have been administratively suspended or revoked. (Administratively suspended or revoked are those actions against a licensee for Continuing Professional Education reporting deficiencies or failure to renew a license.)

(b) Each of the non-CPA individual owners who are residents of the State of Texas must also:

(1) pass an examination on the rules of professional conduct as determined by board rule;

(2) comply with the rules of professional conduct;

(3) maintain any professional designation held by the individual in good standing with the appropriate organization or regulatory body that is identified or used in an advertisement, letterhead, business card, or other firm-related communication; and

(4) provide to the board fingerprinting required in §515.1(d) of this title (relating to License) unless previously submitted to the board.

(c) A "Non-CPA Owner" includes any individual or qualified corporation who has any financial interest in the firm or any voting rights in the firm.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
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CHAPTER 515. LICENSES

22 TAC §515.8

The Texas State Board of Public Accountancy (Board) proposes an amendment to §515.8 concerning Retired or Disability Status.

Background, Justification and Summary

A licensee taking retired status may not be associated with the practice of public accountancy. The proposed rule makes it clear, however, that a retired CPA may verify the work experience requirement of a candidate to become a CPA if the experience was received when the retired CPA was not retired.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will make it clear that verification of work experience for a candidate to become licensed may be signed by a retired CPA when the work experience was acquired prior to the CPA becoming retired.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§515.8. Retired or Disability Status.

(a) Retired status. A licensee who is at least 60 years old and has affirmed that the licensee has no association with accounting may be granted retired status at the time of license renewal. A licensee in retired status is exempt from the fingerprinting required in §515.1(d) of this chapter (relating to License). A licensee who has been granted retired status and who reenters the workforce in a position that has an association with accounting automatically loses the retired status except as provided for in subsection (a)(1) of this section, and must provide the fingerprinting required in §515.1(d) of this chapter unless previously submitted to the board.

(1) A licensee who serves without compensation on a Board of Directors, or Board of Trustees, or provides volunteer tax preparation services, participates in a government sponsored business mentoring program such as the Internal Revenue Service's Volunteer Income Tax Assistance (VITA) program or the Small Business Administration's SCORE program or participates in an advisory role for a similar charitable, civic or other non-profit organization continues to be eligible for retired status.

(2) Licensees providing such uncompensated volunteer services have the responsibility to maintain professional competence

relative to the volunteer services they provide even though exempted from CPE requirements.

(3) The board shall require licensees to affirm in writing their understanding of the limited types of activities in which they may engage while in retired status and their understanding that they have a professional duty to ensure that they hold the professional competencies necessary to offer these limited volunteer services.

(4) Licensees may only convert to retired status if they hold a license in good standing and not be subject to any sanction or disciplinary action.

(5) Compensated services do not include routine reimbursement for travel costs and meals associated with the volunteer services or de minimis per diem amounts paid to cover such expenses.

(6) A retired licensee shall place the word "retired" adjacent to the retired licensee's CPA or Public Accountant title on any business card, letterhead or any other document. A licensee may be held responsible for a third party incorrectly repeating the CPA's title and shall make reasonable efforts to assure that the word "retired" is used in conjunction with CPA. Any of these terms must not be applied in such a manner that could likely confuse the public as to the current status of the licensee. The licensee will not be required to have a certificate issued with the word "retired" on the certificate.

(7) A licensee in "retired" status is not required:

(A) to maintain CPE; and

(B) provide fingerprinting in accordance with §515.1(d) of this chapter unless the retired status is removed.

(8) A retired licensee shall not offer or render professional services that require the retired licensee's signature and use of the CPA title either with or without "retired" attached, except a retired licensee may sign the work experience form [~~providing supervision~~] of an applicant for CPA certification if the supervision occurred prior to retirement [~~to take the UCPAE may sign the work experience form~~].

(9) Upon reentry into the workforce, the licensee must notify the board and request a new license renewal notice and:

(A) pay the license fee established by the board for the period since the licensee became employed;

(B) complete a new license renewal notice; and

(C) meet the CPE requirements for the period since the licensee was granted the retired status as required by §523.113(3) of this title (relating to Exemptions from CPE).

(b) Disability status. Disability status may be granted to an individual who submits to the board a statement and an affidavit from the licensee's physician which identifies the disability and states that the individual is unable to work because of a severe ongoing physical or mental impairment or medical condition that is not likely to improve within the next 12 consecutive months. This status may be granted only at the time of license renewal.

(1) Disability status is immediately revoked upon:

(A) the CPA reentering the workforce in a position that has an association with accounting work for which the CPA receives compensation; or

(B) the CPA serving on a Board of Directors, Board of Trustees, or in a similar governance position unless the service is for a charity, civic, or similar non-profit organization.

(2) Upon reentry into the workforce under such conditions, the individual must notify the board and request a new license renewal notice and:

(A) pay the license fee established by the board for the period since the individual became employed;

(B) complete a new license renewal notice;

(C) meet the CPE requirements for the period pursuant to §523.113(3) of this title; and

(D) provide the fingerprinting required in §515.1(d) of this chapter unless previously submitted.

(c) For purposes of this section the term "association with accounting" shall include the following:

(1) working or providing oversight of accounting or supervising work performed in the areas of financial accounting and reporting; tax compliance, planning or advice; management advisory services; accounting information systems; treasury, finance, or audit; or

(2) representing to the public, including an employer, that the individual is a CPA or public accountant in connection with the sale of any services or products involving accounting services or work, as provided for in §501.52(22) of this title (relating to Definitions) including such designation on a business card, letterhead, proxy statement, promotional brochure, advertisement, or office; or

(3) offering testimony in a court of law purporting to have expertise in accounting and reporting, auditing, tax, or management services; or

(4) providing instruction in accounting courses; or

(5) for purposes of making a determination as to whether the individual fits one of the categories listed in this section the questions shall be resolved in favor of including the work as an "association with accounting."

(d) Nothing herein shall be construed to limit the board's disciplinary authority with regard to a license in retired or disabled status. All board rules and all provisions of the Act apply to an individual in retired or disability status.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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CHAPTER 517. PRACTICE BY CERTAIN OUT OF STATE FIRMS AND INDIVIDUALS

22 TAC §517.2

The Texas State Board of Public Accountancy (Board) proposes an amendment to §517.2 concerning Practice by Certain Out of State Individuals.

Background, Justification and Summary

The Board proposes to:

1. delete the reference to the National Qualifications Appraisal Services, which language the legislature removed from the Act;

2. clarify that the Board will allow licensees to practice in Texas without a reciprocal license, in order to provide for "mobility", so long as the state they are licensed in has substantially the same licensing requirements as Texas;

3. reflect that if an out of state licensee held the substantially equivalent out of state license on December 31, 2024, the licensee would be permitted to practice under mobility without a reciprocal license. This protects those licensed out of state on that date, if the state they were originally licensed in, is subsequently determined to not have substantially equivalent licensing requirements.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will inform the public on the acceptance and provisions for mobility of licensees from out of state providing accounting services in Texas. It will also provide "safe harbor" recognition to out of state licensees that were licensed in their state when their state was substantially equivalent even if the state is subsequently determined to no longer be substantially equivalent.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§517.2. Practice by Certain Out of State Individuals.

(a) An individual who holds an active [a] certificate or license as a CPA issued by another state and whose principal place of business is not in this state may exercise all the privileges of certificate and license holders of this state without obtaining a certificate or license under this chapter if the individual:

(1) has passed the uniform CPA examination;

(2) has completed:

(A) a baccalaureate degree with at least 150 semester hours and a concentration in accounting or equivalent courses;

(B) a graduate degree with a concentration in accounting or equivalent courses; or

(C) a baccalaureate degree with a concentration in accounting or equivalent courses; and

(3) at the time the individual's certificate or license was issued in the other state, had completed:

(A) at least one year of work experience, if licensed under an educational pathway comparable to subparagraphs (2)(A) or (B) of this subsection; or

(B) at least two years of work experience, if licensed under an educational pathway comparable to subparagraph (2)(C) of this subsection.

[(1) NASBA's National Qualification Appraisal Service has verified that the other state has education, examination, and experience requirements for certification or licensure that are comparable to or exceed the requirements for licensure as a CPA of the AICPA/NASBA UAA and the board determines that the licensure requirements of that Act are comparable to or exceed the licensure requirements of this chapter; or]

[(2) the individual obtains from NASBA's National Qualification Appraisal Service verification that the individual's education, examination, and experience qualifications are comparable to or exceed the requirements for licensure as a CPA of the AICPA/NASBA UAA and the board determines that the licensure requirements of that Act are comparable to or exceed the licensure requirements of this chapter.]

(b) An individual who meets the requirements of subsection (a) [(a)(1) or (2)] of this section and who offers or renders professional services in person or by mail, telephone, or electronic means may practice public accountancy in this state without notice to the board.

(c) Notwithstanding any other law, the board may prohibit an individual not licensed in this state from exercising the privileges of certificate and license holders of this state if the board determines the individual does not meet the requirements of subsection (a) of this section.

(d) An individual who on December 31, 2024, held a certificate or license issued by another state and practiced under a privilege of this section in this state may exercise all the privileges of the holder of a certificate and license issued under this title without obtaining a certificate or license in this state. To the extent that the individual exercises privileges as described by this subsection, the individual is subject to this title.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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CHAPTER 523. CONTINUING PROFESSIONAL EDUCATION

SUBCHAPTER B. CONTINUING PROFESSIONAL EDUCATION RULES FOR INDIVIDUALS

22 TAC §523.112

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.112 concerning Required CPE Participation.

Background, Justification and Summary

The Board proposes to revise Board §*523.112* to clarify that an applicant for reinstatement must have at least 120 hours of CPE within the last 36 months from the date of the application for reinstatement with 20 of those continuing professional education (CPE) hours having been completed within the 12 months preceding the application for reinstatement.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will advise the public of the CPE requirements for reinstatement.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small busi-

nesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§523.112. Required CPE Participation.

(a) A licensee shall complete at least 120 CPE credits in each three-year period, and a minimum of 20 CPE credits in each one-year period.

(b) CPE, except as provided by board rule, shall be offered by board authorized CPE sponsors.

(c) CPE requirements for the issuance or renewal of a license are as follows:

(1) Licensees who have been certified or registered for less than 12 months do not have a CPE credit requirement. The first license period begins on the date of certification and ends with the last day of the licensee's birth month.

(2) To be issued a license for the first full 12-month license period, the licensee does not have a CPE requirement. CPE earned prior to the first 12-month license period will not be applied toward the three-year requirement.

(3) To be issued a license for the second full 12-month period, the licensee shall report a minimum of 20 CPE credits. The CPE credits shall be completed in the 12 months preceding the second year of licensing.

(4) To be issued a license for the third full 12-month license period, the licensee shall report a total of at least 60 CPE credits that were completed in the 24 months preceding the license period. At least 20 CPE credits of the requirement shall be completed in the 12 months preceding the third year of licensing.

(5) To be issued a license for the fourth full 12-month period, the licensee shall report a total of at least 100 CPE credits that were completed in the 36 months preceding the license period. At least 20 CPE credits of the requirement shall be completed in the 12 months preceding the fourth year of licensing.

(6) To be issued a license for the fifth and subsequent license periods, the licensee shall report a total of at least 120 CPE credits that were completed in the 36 months preceding the license period, and at least 20 CPE credits of the requirement shall be completed in the 12 months preceding the fifth year of licensing.

(d) A former licensee whose certificate or registration has been revoked for failure to pay the license fee and who makes application for reinstatement shall pay the required fees and applicable late fees and must report a total of at least 120 CPE credits that were completed in the 36 months preceding the application for reinstatement, and at least 20 CPE credits of the requirement shall be completed in the twelve months preceding the application for reinstatement [~~the minimum CPE credits missed~~].

(e) A non-resident licensee seeking renewal of a license in Texas shall be determined to have met the CPE requirement by meeting the CPE requirements for renewal of a certificate/license in the state in which the licensee's principal place of business is located.

(1) Non-resident licensees shall demonstrate compliance with the CPE renewal requirements of the state in which the licensee's principal place of business is located by signing a statement to that effect during the renewal process of this state.

(2) If a non-resident licensee's principal place of business state has no CPE requirements for renewal of a certificate/license, the non-resident licensee must comply with all CPE requirements for renewal of a certificate in Texas.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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22 TAC §523.113

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.113 concerning Exemptions from CPE.

Background, Justification and Summary

The Board is recommending a revision to *§523.113* to clarify that a faculty member is not considered to be in the practice of public accountancy when the faculty member only provides instruction in accounting courses. The faculty member loses this exemption from continuing professional education (CPE) and licensing when holding out to be a CPA when providing his expertise as a CPA while not providing instruction in accounting outside of the educational course work setting.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment will help the public to understand when a license to practice public accounting may be needed.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§523.113. Exemptions from CPE.

The board shall not issue or renew a license to an individual who has not earned the required CPE credits unless an exemption has been granted by the board.

(1) The board may consider granting an exemption from the CPE requirement during the period for which the exemption is requested on a case-by-case basis if:

(A) a licensee completes and forwards to the board an affidavit indicating that the licensee is not employed; or

(B) a licensee completes and forwards to the board an affidavit indicating no association with accounting. The affidavit shall include, as a minimum, a brief description of the duties performed, job title, and verification by the licensee's immediate supervisor. For purposes of this section, the term "association with accounting" shall include the following:

(i) working, providing oversight of accounting, or supervising work performed in the areas of financial accounting and reporting; tax compliance, planning or advice; management advisory services; accounting information systems; treasury, finance, or audit; or

(ii) representing to the public, including an employer, that the licensee is a CPA or public accountant in connection with the sale of any services or products involving professional accounting services as defined in the Rules of Professional Conduct, §501.52(22) of this title (relating to Definitions), including such designation on a business card, letterhead, proxy statement, promotional brochure, advertisement, or office; or

(iii) offering testimony in a court of law purporting to have expertise in accounting and reporting, auditing, tax, or management services; or

~~*[(iv)* providing instruction in accounting courses; or]~~

(iv) [~~(v)~~] for purposes of making a determination as to whether the licensee fits one of the categories listed in this clause and clauses (i) - (iii) [~~(iv)~~] of this subparagraph, the questions shall be resolved in favor of including the work as having an association with accounting.

(C) a licensee not residing in Texas, who submits an affidavit to the board that the licensee does not serve Texas clients from out of state;

(D) a licensee shows reasons of health, certified by a medical doctor, that prevent compliance with the CPE requirement. A licensee must petition the board for the exemption and provide documentation that clearly establishes the period of disability and the resulting physical limitations;

(E) a licensee who is a military service member during the period for which the exemption is requested, and files a copy of orders to active military duty with the board; or

(F) a licensee shows reason which prevents compliance that is acceptable to the board.

(2) A licensee who has been granted the retired or disability status under §515.8 of this title (relating to Retired or Disability Status) is not required to report any CPE credits.

(3) A licensee who no longer meets the eligibility requirements for an exemption under this section or no longer qualifies for retired or disability status under §515.8 of this title shall be required to report sufficient CPE credits to be in compliance with §523.112 of this chapter (relating to Required CPE Participation). CPE credits shall be

earned in the technical area as described in §523.102 of this chapter (relating to CPE Purpose and Definitions) and §523.130 of this chapter (relating to Ethics Course Requirements).

(4) A faculty member of an educational institution may be exempt from CPE only when offering accounting services as a faculty member

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502491
J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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22 TAC §523.118

The Texas State Board of Public Accountancy (Board) proposes an amendment to §523.118 concerning Limitations of Courses.

Background, Justification and Summary

The proposed rule revision limits the total number of hours a licensee may apply toward one certification program to 20 hours. (An example of a certification program is Certified Financial Planner). It also limits the total number of continuing professional education (CPE) credits from a certification program to no more than 50 per cent of the total CPE credits applied in a three-year reporting period.

Fiscal Note

William Treacy, Executive Director of the Board, has determined that for the first five-year period the proposed amendment is in effect, there will be no additional estimated cost to the state, no estimated reduction in costs to the state and to local governments, and no estimated loss or increase in revenue to the state, as a result of enforcing or administering the amendment.

Public Benefit

The adoption of the proposed rule amendment clarifies for the public the number hours that may be applied to a licensee's required CPE to 20 hours per certification and to 50 percent to the total number of hours required in a three-year reporting period.

Probable Economic Cost and Local Employment Impact

Mr. Treacy, Executive Director, has determined that there will be no probable economic cost to persons required to comply with the amendment and a Local Employment Impact Statement is not required because the proposed amendment will not affect a local economy.

Small Business, Rural Community and Micro-Business Impact Analysis

William Treacy, Executive Director, has determined that the proposed amendment will not have an adverse economic effect on small businesses, rural communities or micro-businesses because the amendment does not impose any duties or obligations upon small businesses, rural communities or micro-businesses; therefore, an Economic Impact Statement and a Regulatory Flexibility Analysis are not required.

Government Growth Impact Statement

William Treacy, Executive Director, has determined that for the first five-year period the amendment is in effect, the proposed rule: does not create or eliminate a government program; does not create or eliminate employee positions; does not increase or decrease future legislative appropriations to the Board; does not increase or decrease fees paid to the Board; does not create a new regulation; limits the existing regulation; does not increase or decrease the number of individuals subject to the proposed rule's applicability; and does not positively or adversely affect the state's economy.

Takings Impact Assessment

No takings impact assessment is necessary because there is no proposed use of private real property as a result of the proposed rule revision.

The requirement related to a rule increasing costs to regulated persons does not apply to the Texas State Board of Public Accountancy because the rule is being proposed by a self-directed semi-independent agency. (§2001.0045(c)(8))

Public Comment

Written comments may be submitted to J. Randel (Jerry) Hill, General Counsel, Texas State Board of Public Accountancy, 505 E. Huntland Dr., Suite 380, Austin, Texas 78752 or faxed to his attention at (512) 305-7854, no later than noon on August 25, 2025.

The Board specifically invites comments from the public on the issues of whether or not the proposed amendment will have an adverse economic effect on small businesses. If the proposed rule is believed to have an adverse effect on small businesses, estimate the number of small businesses believed to be impacted by the rule, describe and estimate the economic impact of the rule on small businesses, offer alternative methods of achieving the purpose of the rule; then explain how the Board may legally and feasibly reduce that adverse effect on small businesses considering the purpose of the statute under which the proposed rule is to be adopted; and finally, describe how the health, safety, environmental, and economic welfare of the state will be impacted by the various proposed methods. See Texas Government Code, §2006.002(c).

Statutory Authority

The amendment is proposed under the Public Accountancy Act ("Act"), Texas Occupations Code §901.151, which authorizes the Board to adopt rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by this proposed amendment.

§523.118. Limitations of Courses.

(a) A licensee may not claim more than 50 percent of the total CPE credits required from the non-technical area in a three-year reporting period.

(b) A licensee may not claim more than 50 percent of the total CPE credits required in a three-year reporting period from nano-learning programs.

(c) A licensee may claim up to 20 CPE credits for [~~not claim more than 50 percent of the total CPE credits required in a three-year reporting period from~~] the successful completion of a certification program [~~programs~~], such as a Certified Financial Planner, Certified

Internal Auditor, Certified Fraud Examiner, other related financial certifications, and/or related financial securities licenses.

(d) A licensee may claim no more than 50 percent of the total CPE credits required in a three-year reporting period from the successful completion of certification programs.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 305-7842

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TITLE 25. HEALTH SERVICES

PART 1. DEPARTMENT OF STATE HEALTH SERVICES

CHAPTER 13. HEALTH PLANNING AND RESOURCE DEVELOPMENT

SUBCHAPTER G. WORKPLACE VIOLENCE AGAINST NURSES PREVENTION GRANT PROGRAM

25 TAC §§13.81 - 13.87

The executive commissioner of the Texas Health and Human Services Commission (HHSC), on behalf of the Department of State Health Services (DSHS), proposes amendments to §13.81, concerning Purpose; §13.82, concerning Definitions; §13.83, concerning Grant Application Procedures; §13.84, concerning Program Funding and Award Amounts; §13.85, concerning Award Criteria and Selection for Funding; §13.86, concerning General Information; and §13.87, concerning Reporting.

BACKGROUND AND PURPOSE

The purpose of the proposal is to broaden language to ensure program rules are not more restrictive than statute. Throughout the rules, the term "Request for Applications" is replaced with the more general term "solicitation." The proposed amendments remove requirements for "short-term and long-term" performance measures and remove language related to priority selection, which will instead be defined in each solicitation. The amendments improve flexibility in implementation of the grant program and increase accessibility to grant funds for health care facilities. Additionally, amendments reflect rule writing standards and plain language expectations to ensure clarity and readability.

SECTION-BY-SECTION SUMMARY

The proposed amendment to §13.81, concerning Purpose, deletes subsection (b) and the section is subsequently reformatted.

The proposed amendment to §13.82, concerning Definitions, replaces wording, adds "HSC" as an acronym, and revises paragraph (4) by adding new subparagraphs (A) - (D) for clarity.

The proposed amendment to §13.83, concerning Grant Application Procedures, adds the department will publish solicitations on its grant's website and replaces wording throughout for clarity.

The proposed amendment to §13.84, concerning Program Funding and Award Amounts, adds the total funding available for the program depends on the amount of money transferred to the department from the Texas Board of Nursing to fund grants.

The proposed amendment to §13.85, concerning Award Criteria and Selection for Funding, removes the requirement for "short-term and long-term" performance measures, broadens the requirement for proposed performance metrics, and replaces wording throughout for clarity. It also removes language related to priority selection, which will instead be defined in each solicitation.

The proposed amendment to §13.86, concerning General Information, clarifies the department may cancel or suspend a grant solicitation at its discretion, and removes the acronyms, NOGA and RFA.

The proposed amendment to §13.87, concerning Reporting, replaces wording, adds language to clarify reporting requirements for grant recipients, and adds the department will publish the grant awards report on the department's website.

Lastly, the amendments incorporate rule writing standards and plain language expectations.

FISCAL NOTE

Christy Havel Burton, Chief Financial Officer, has determined that for each year of the first five years that the rules will be in effect, enforcing or administering the rules does not have foreseeable implications relating to costs or revenues of state or local governments.

GOVERNMENT GROWTH IMPACT STATEMENT

DSHS has determined that during the first five years that the rules will be in effect:

(1) the proposed rules will not create or eliminate a government program;

(2) implementation of the proposed rules will not affect the number of DSHS employee positions;

(3) implementation of the proposed rules will result in no assumed change in future legislative appropriations;

(4) the proposed rules will not affect fees paid to DSHS;

(5) the proposed rules will not create a new regulation;

(6) the proposed rules will not expand, limit, or repeal existing regulations;

(7) the proposed rules will not change the number of individuals subject to the rules; and

(8) the proposed rules will not affect the state's economy.

SMALL BUSINESS, MICRO-BUSINESS, AND RURAL COMMUNITY IMPACT ANALYSIS

Christy Havel Burton has also determined that there will be no adverse economic effect on small businesses, micro-businesses, or rural communities.

Participation in applying for grant funds is optional.

LOCAL EMPLOYMENT IMPACT

The proposed rules will not affect a local economy.

COSTS TO REGULATED PERSONS

Texas Government Code §2001.0045 does not apply to these rules because the rules do not impose a cost on regulated persons.

PUBLIC BENEFIT AND COSTS

Dr. Varun Shetty, Chief State Epidemiologist, has determined that for each year of the first five years the rules are in effect, the public benefit will be increased flexibility in the implementation of the grant program and increased accessibility to grant funds.

Christy Havel Burton has also determined that for the first five years the rules are in effect, there are no anticipated economic costs to persons who are required to comply with the proposed rules because application for grant funds is voluntary.

TAKINGS IMPACT ASSESSMENT

DSHS has determined that the proposal does not restrict or limit an owner's right to the owner's property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking under Texas Government Code §2007.043.

PUBLIC COMMENT

Written comments on the proposal may be submitted to Rules Coordination Office, P.O. Box 13247, Mail Code 4102, Austin, Texas 78711-3247, or street address 4601 West Guadalupe Street, Austin, Texas 78751; or emailed to *HHSRulesCoordinationOffice@hhs.texas.gov*.

To be considered, comments must be submitted no later than 31 days after the date of this issue of the *Texas Register*. Comments must be (1) postmarked or shipped before the last day of the comment period; (2) hand-delivered before 5:00 p.m. on the last working day of the comment period; or (3) emailed before midnight on the last day of the comment period. If the last day to submit comments falls on a holiday, comments must be postmarked, shipped, or emailed before midnight on the following business day to be accepted. When emailing comments, please indicate "Comments on Proposed Rule 25R011" in the subject line.

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §524.0151 and Texas Health and Safety Code §1001.075, which provide that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by DSHS and for the administration of Texas Health and Safety Code Chapter 1001; and Texas Health and Safety Code §105.011(e) which provides that DSHS shall provide administrative assistance to the nursing resource section in administering the grant program and that the Executive Commissioner shall adopt rules to implement the grant program, including rules governing the submission and approval of grant requests and establishing a reporting procedure for grant recipients.

The amendments implement Texas Government Code §524.0151 and Texas Health and Safety Code Chapter 1001 and §105.011.

§13.81. Purpose.

[~~(a)~~] The purpose of this subchapter is to implement Texas Health and Safety Code [~~,~~] §105.011. The Workplace Violence Against Nurses Prevention Grant Program authorizes the Department of State Health Services to award grant payments to fund innovative approaches [~~aimed at reducing~~] verbal and physical violence against nurses in hospitals, freestanding emergency medical care facilities, nursing facilities, and home health agencies.

[~~(b) Grant funds awarded under this subchapter may only be spent on a program intended to identify and implement efforts to reduce verbal and physical violence against nurses in hospitals, freestanding emergency medical care facilities, nursing facilities, and home health agencies.~~]

§13.82. Definitions.

The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Administer--Includes the proposal, development, and implementation of a program, within the parameters of a solicitation [~~the Request for Applications~~].

(2) Department--The Texas Department of State Health Services.

(3) Health care facility--Includes [~~any of~~] the following, as defined in Texas Health and Safety Code (HSC)[~~,~~] §105.001:

(A) freestanding [~~"Freestanding~~] emergency medical care facility[~~" means a facility~~] licensed under Texas HSC [~~Health and Safety Code,~~] Chapter 254;[~~.~~]

(B) home [~~"Home~~] health agency[~~" means a home and community support services agency~~] licensed under Texas HSC [~~Health and Safety Code,~~] Chapter 142;[~~.~~]

(C) hospital [~~"Hospital" means a~~]:

(i) a general or special hospital licensed under Texas HSC [~~Health and Safety Code,~~] Chapter 241;

(ii) a private mental hospital licensed under Texas HSC [~~Health and Safety Code,~~] Chapter 577; or

(iii) a hospital that is maintained or operated by this state or an agency of this state; or[~~.~~]

(D) nursing [~~"Nursing~~] facility[~~" means an institution~~] licensed under Texas HSC [~~Health and Safety Code,~~] Chapter 242.

(4) Solicitation [~~Request for Applications (RFA)~~]--A type of [~~solicitation~~] notice in which the department announces: [~~available grant funding, sets forth the guidelines governing the program, provides evaluation criteria for submitted applications, and provides instructions for eligible entities to submit applications for such funding. The guidelines governing the program may include a letter of intent, eligibility requirements, performance expectations, budget guidelines, reporting requirements, and other standards of accountability for this program.~~]

(A) the available grant funding;

(B) the guidelines for the program;

(C) the evaluation criteria; and

(D) the instructions for submitting applications.

(5) Workplace Violence Prevention Grant Program--A grant program supporting health care facilities to protect nurses from violence [~~under which the department awards grant payments to a health care facility to administer innovative programs designed to reduce verbal and physical violence against nurses in this state~~].

§13.83. Grant Application Procedures.

The department will publish solicitations on its grant's website. Each [~~To qualify for funding consideration, each~~] eligible applicant must submit an application to the department staff listed [~~identified~~] in the solicitation to qualify for funding [~~RFA~~]. Each application must, as outlined in the solicitation:

(1) be submitted electronically in the required [~~a~~] format [~~specified in the RFA~~];

(2) adhere to the grant program requirements and [~~the~~] funding priorities [~~contained in the RFA~~]; and

(3) include [~~be submitted with~~] proper authorization and be submitted no later than [~~on or before~~] the date and time specified by the department in the solicitation [~~RFA~~].

§13.84. Program Funding and Award Amounts.

The total funding available for the program depends on the amount of money transferred to the department from the Texas Board of Nursing to fund grants. Each solicitation will specify the maximum and minimum award amounts and the maximum number of awards [~~The maximum amount of funding available to the program is dependent on the extent funding is available through fees collected under Texas Occupations Code, §301.155(c) for each biennium. Maximum and minimum award levels and maximum number of awards will be specified in each RFA~~].

§13.85. Award Criteria and Selection for Funding.

(a) The department will select applicants [~~Applicants shall be selected~~] for funding on a competitive basis.

(b) The department will only consider applicants that meet all requirements of the solicitation [~~An application must meet the requirements of the RFA and be submitted with proper authorization on or before the day and time specified by the RFA to qualify for further consideration~~].

(c) A taskforce assigned by the Nursing Advisory Committee, defined by Texas Health and Safety Code[~~,~~] §104.0155, will review and score [~~evaluate the~~] proposals. The [~~Proposals will be scored by the taskforce and the~~] taskforce will provide [~~make~~] recommendations for grant awards to the department [~~for grant awards~~].

(d) Each application must [~~shall~~]:

(1) provide a detailed explanation of the applicant's workplace violence prevention program, including:

(A) a [~~timeline for~~] development and implementation timeline;

(B) a description of the population identified to participate in the program;

(C) a detailed budget; and

(D) a description of the program's [~~detailed information related to~~] administration and support [~~for the program~~];

(2) describe [~~document~~] how the workplace violence prevention program will reduce [~~achieve the goals of reducing~~] verbal and physical violence against nurses in the applicant's health care facility; and

(3) propose performance metrics to measure program outcomes [~~for measuring short-term and long-term outcomes of the program~~], including changes [~~a measure of the change~~] in the severity and frequency of verbal and physical violence against nurses.

(e) Each solicitation will define the priority criteria for selection. [~~Priority for selection will be given to applicants that demonstrate an innovative approach to reducing verbal and physical violence against nurses that includes the following:~~]

[~~(1) evidence supporting the conceptual foundation of the proposed program;~~]

[~~(2) evidence of institutional commitment to reduce workplace violence against nurses;~~]

[~~(3) evidence of institutional support of the proposal, such as staff time, access to institutional resources, and/or funds; and~~]

[~~(4) description of a plan for long-term sustainability of the proposed program.~~]

§13.86. General Information.

(a) [~~Cancellation or Suspension of Grant Solicitations.~~] The department may [~~has the right to~~] cancel or suspend a grant solicitation at its discretion [~~or RFA for any reason~~].

(b) Successful applicants must sign a Notice of Grant Award issued by the department before receiving funds [~~Notice of Grant Award (NOGA). Before release of funds, the successful applicants must sign a NOGA issued by department staff~~].

§13.87. Reporting.

(a) Each grant recipient must submit [~~shall provide~~] reports to the department as required by the solicitation [~~RFA~~]. The reports must [~~include descriptions of the following~~]:

(1) describe activities funded through the grant;

(2) report changes [~~the change~~] in the severity and frequency of verbal and physical violence against nurses;

(3) evaluate program performance based on stated performance metrics; and

(4) detail budget expenditures.

(b) At least annually, the department's Nursing Resource Section will [~~of the Health Professions Resource Center of the department shall~~] publish a report describing the grants awarded under this subchapter, including the amount of the grants, the purpose of the grants, and the outcome reported by the grant recipient. The department will publish the report on its website.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502244
Karen Ray
Chief Counsel
Department of State Health Services
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 517-6902

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TITLE 26. HEALTH AND HUMAN SERVICES

PART 1. HEALTH AND HUMAN SERVICES COMMISSION

CHAPTER 301. LOCAL AUTHORITY RESPONSIBILITIES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) proposes amendments to §301.301, concerning Purpose and Application; §301.303, concerning Definitions; §301.321, concerning Leadership; §301.323, concerning Environment of Care and Safety; §301.327, concerning Access to Mental Health Community Services; §301.329, concerning Medical Records System; §301.331, concerning Competency and Credentialing; §301.333, concerning Quality Management; §301.335, concerning Utilization Management; §301.351, concerning Crisis Services; §301.353, concerning Provider Responsibilities for Treatment Planning and Service Authorization; §301.355, concerning Medication Services; §301.357, concerning Additional Standards of Care Specific to Mental Health Community Services for Children and Adolescents; §301.359, concerning Telemedicine Services; §301.361, concerning Documentation of Service Provision; and §301.363, concerning Supervision; and the repeal of §301.305, concerning Responsibility for Compliance, and §301.325, concerning Rights and Protection.

BACKGROUND AND PURPOSE

HHSC proposes to amend rules in the Texas Administrative Code (TAC) Title 26, Chapter 301, Subchapter G relating to Mental Health Community Services Standards. The main purpose of this proposal is to expand the allowable educational and experiential requirements for a Qualified Mental Health Professional-Community Services (QMHP-CS) credential.

The amendments will expand the QMHP-CS criteria to include non-human services degree programs if the applicant or employee has at least one year of experience as an intern or employee in a mental health or substance use program. The proposed changes intend to increase access to behavioral health services by expanding the mental health workforce.

The proposed rules update the list of persons and entities the rules apply to by adding local behavioral health authorities (LBHAs) and removing managed care organizations to align with current practice. These changes are reflected throughout Subchapter G.

Additionally, HHSC proposes amendments to clarify statutory requirements; add, remove, and update definitions; update Medicaid-related information; update and add cross-references; and make grammatical and editorial changes for understanding, accuracy, and uniformity to make the rules easier to read and understand.

SECTION-BY-SECTION SUMMARY

Division 1, General Provisions

The proposed amendment to §301.301 updates terminology to "community mental health services." The proposed amendment also updates the list of persons and entities the chapter applies to. The proposed amendment also updates the TAC cross-references for accuracy.

The proposed amendment to §301.303 adds new definitions; revises definitions for clarification, consistency, and current terminology; aligns definitions with other rules; and removes definitions no longer needed or no longer used in Subchapter G. The definitions are renumbered as a result of these changes.

The proposed repeal of §301.305 deletes the rule as no longer necessary because it contains inaccurate requirements and repetitive information found elsewhere in this subchapter.

Division 2, Organizational Standards

The proposed amendment to §301.321 clarifies that the requirements of this section apply to LBHAs and updates terminology.

The proposed amendment to §301.323 clarifies that the local mental health authority (LMHA), LBHA, and provider must implement an infection control plan and procedures in accordance with applicable state and federal laws. The proposed amendment also reorders the subsections, removes unnecessary rule language, updates terminology, corrects for grammar, and updates TAC cross-references for accuracy.

The proposed repeal of §301.325 deletes the rule as no longer necessary because it contains redundant requirements found in applicable state and federal laws; 26 TAC Chapter 301, Subchapter C, concerning Charges for Community Services; 26 TAC Chapter 301, Subchapter M, concerning Abuse, Neglect, and Exploitation in Local Authorities and Community Centers; and 26 TAC Chapter 320, Subchapter A, concerning Rights of Individuals Receiving Mental Health Services.

The proposed amendment to §301.327 changes the title of this section from "Access to Mental Health Community Services" to "Access to Community Mental Health Services" to update for current terminology. The proposed amendment also updates terminology, corrects for grammar, and updates TAC cross-references for accuracy.

The proposed amendment to §301.329 clarifies that the maintenance of a written disaster recovery plan for information resources will ensure service continuity as required by applicable state and federal laws. The proposed amendment also removes unnecessary language and an outdated TAC cross-reference.

The proposed amendment to §301.331 clarifies in subsection (a) that this requirement applies to the competency of staff members and volunteers. The proposed amendment also revises subsection (d) to be consistent with the new QMHP-CS definition. The proposed amendment in new subsection (i) requires the LMHA, LBHA, and provider to comply with any applicable Medicaid requirements.

The proposed amendment to §301.333 updates terminology throughout the section.

The proposed amendment to §301.335 updates terminology, removes unnecessary language, and updates TAC cross-references for accuracy throughout the section.

Division 3, Standards of Care

The proposed amendment to §301.351 clarifies that the provider of crisis services must maintain documentation of the individual's name and any other identifiable health information in accordance with the Health Insurance Portability and Accountability Act. The proposed amendment also updates terminology, updates TAC cross-references for accuracy, and removes unnecessary language throughout the section.

The proposed amendment to §301.353 removes an outdated requirement in subsection (d)(1)(A) and reorders the subsequent subparagraphs. The proposed amendment also updates ter-

minology, updates TAC cross-references for accuracy, and removes unnecessary language throughout the section.

The proposed amendment to §301.355 updates terminology, removes unnecessary language, and updates a TAC cross-reference for accuracy throughout this section.

The proposed amendment to §301.357 clarifies that the uniform assessment must be administered in accordance with HHSC's utilization management guidelines. The proposed amendment also updates terminology throughout the section.

The proposed amendment to §301.359 makes editorial changes to clarify providers must provide care within the scope of the provider's credential or license.

The proposed amendment to §301.361 updates terminology, corrects for grammar, and updates TAC cross-references for accuracy throughout the section.

The proposed amendment to §301.363 clarifies and removes redundant TAC language by requiring the LMHA, LBHA, and provider to follow the rules listed in 1 TAC §353.1419 (relating to Supervision Requirements).

FISCAL NOTE

Trey Wood, HHSC's Chief Financial Officer, has determined that for each year of the first five years that the rules will be in effect, enforcing or administering the rules does not have foreseeable implications relating to costs or revenues of state or local governments.

GOVERNMENT GROWTH IMPACT STATEMENT

HHSC has determined that during the first five years that the rules will be in effect:

(1) the proposed rules will not create or eliminate a government program;

(2) implementation of the proposed rules will not affect the number of HHSC employee positions;

(3) implementation of the proposed rules will result in no assumed change in future legislative appropriations;

(4) the proposed rules will not affect fees paid to HHSC;

(5) the proposed rules will not create a new regulation;

(6) the proposed rules will expand and repeal existing regulations;

(7) the proposed rules will increase the number of individuals subject to the rules; and

(8) the proposed rules will not affect the state's economy.

SMALL BUSINESS, MICRO-BUSINESS, AND RURAL COMMUNITY IMPACT ANALYSIS

Trey Wood has also determined that there will be no adverse economic effect on small businesses, micro-businesses, or rural communities because there is no requirement to alter current business practices.

LOCAL EMPLOYMENT IMPACT

The proposed rule will not affect a local economy.

COSTS TO REGULATED PERSONS

Texas Government Code §2001.0045 does not apply to these rules because the rules are necessary to protect the health, safety, and welfare of the residents of Texas; do not impose a cost on regulated persons; and are amended to reduce the burden or responsibilities imposed on regulated persons by the rules.

PUBLIC BENEFIT AND COSTS

Trina Ita, Deputy Executive Commissioner of Behavioral Health Services, has determined that for each year of the first five years the rules are in effect, the public benefit will be the increase in access to behavioral health services by expanding the mental health workforce to address an increased demand for behavioral health services.

Trey Wood has also determined that for the first five years the rules are in effect, there are no anticipated economic costs to persons who are required to comply with the proposed rules because providers will have more flexibility in hiring for the QMHP-CS position and will not incur any additional costs.

TAKINGS IMPACT ASSESSMENT

HHSC has determined that the proposal does not restrict or limit an owner's right to the owner's property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking under Texas Government Code §2007.043.

PUBLIC COMMENT

Written comments on the proposal may be submitted to Rules Coordination Office, P.O. Box 13247, Mail Code 4102, Austin, Texas 78711-3247, or street address 4601 West Guadalupe Street, Austin, Texas 78751; or emailed to *HHSRulesCoordinationOffice@hhs.texas.gov*.

To be considered, comments must be submitted no later than 31 days after the date of this issue of the *Texas Register*. Comments must be (1) postmarked or shipped before the last day of the comment period; (2) hand-delivered before 5:00 p.m. on the last working day of the comment period; or (3) emailed before midnight on the last day of the comment period. If the last day to submit comments falls on a holiday, comments must be postmarked, shipped, or emailed before midnight on the following business day to be accepted. When emailing comments, please indicate "Comments on Proposed Rule 25R004" in the subject line.

SUBCHAPTER G. COMMUNITY MENTAL HEALTH [~~COMMUNITY~~] SERVICES STANDARDS

DIVISION 1. GENERAL PROVISIONS

26 TAC §301.301, §301.303

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, Texas Health and Safety Code §533.0345(a), which requires the executive commissioner of HHSC to by rule develop model program standards for mental health services for use by each state agency that provides or pays for mental health services; Texas Health and Safety Code §533.0356(i), which allows the executive commissioner of HHSC to adopt rules to govern the operations of local behavioral health authorities; and Texas Health and Safety Code §534.052(a), which requires the executive commissioner of HHSC to adopt rules, including standards, the executive commissioner considers necessary and appropriate to ensure the

adequate provision of community-based mental health services through an LMHA under Texas Health and Safety Code Chapter 534.

The amendments affect Texas Government Code §524.0151 and Texas Health and Safety Code §533.0345(a), §533.0356(i), and §534.052(a).

§301.301. Purpose and Application.

(a) The purpose of this subchapter is to establish performance requirements and standards for the provision of community mental health [~~community~~] services, as authorized by [~~the~~] Texas Health and Safety Code[~~,~~] §534.052.

(b) This subchapter applies to persons and entities with which the Texas Health and Human Services Commission (HHSC) [~~department~~] contracts, including local mental health authorities (LMHAs)[~~(LMHA)~~], local behavioral health authorities (LBHAs)[~~managed care organizations (MCO)~~], providers of mental health rehabilitative services, as defined in §306.305 [~~§419.453~~] of this title (relating to Definitions), and providers of mental health case management services, as defined in §306.255 [~~§412.403~~] of this title (relating to Definitions), and requires that they ensure the performance requirements and standards in this subchapter are met in the provision of community mental health [~~community~~] services.

§301.303. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.[~~:~~]

(1) Access--The ability to obtain community mental health [~~community~~] services based upon components such as availability and acceptability of services to the individual[~~,~~] or the individual's LAR [~~Legally Authorized Representative (LAR) on the individual's behalf, transportation, distance, hours of operation, language, and the cultural competency of staff members. Barriers to access may be structural, financial, or specific to the individual~~].

(2) Adolescent--An individual who is at least 13 years of age, but younger than 18 years of age.

(3) Adult--An individual who is 18 years of age or older.

[~~(4) Advanced practice nurse--A staff member who is a registered nurse approved by the Texas Board of Nursing as a clinical nurse specialist in psychiatric/mental health or nurse practitioner in psychiatric/mental health, in accordance with Texas Occupations Code, Chapter 301.~~]

(4) [~~(5)~~] Advocacy--Support for an individual or family member in expressing and resolving issues or concerns regarding access to or quality and appropriateness of services.

(5) [~~(6)~~] Appeal--A mechanism for an independent review of an adverse determination.

(6) APRN--Advanced practice registered nurse. A registered nurse licensed by the Texas Board of Nursing as provided in Texas Occupations Code Chapter 301.152.

(7) Assessment--A systematic process for measuring an individual's service needs.

(8) Child--An individual who is at least three years of age, but younger than 13 years of age.

(9) CFP--Certified family partner. A person who meets the credentialing requirements in 1 TAC §353.1415(d) (relating to Staff Member Credentialing).

(10) CFR--Code of Federal Regulations.

(11) Community mental health services--Services medically necessary to treat, care for, supervise, and rehabilitate individuals who have a mental illness or emotional disorder or a COPSD. These services include services for the prevention of and recovery from such disorders, but do not include inpatient services provided in a state facility.

(12) [~~(9)~~] Competency--Demonstrated knowledge and skilled performance of a particular activity.

(13) [~~(10)~~] Continuity of care [~~services~~]--Activities designed to [~~Services that~~] ensure an individual is provided uninterrupted services [~~are provided to an individual~~] during a transition between inpatient and outpatient services that assist the individual and LAR, if applicable, in identifying, accessing, and coordinating LMHA or LBHA services and other appropriate services and supports in the community needed by the individual, including [~~service types (e.g., inpatient services, outpatient services) or providers, in accordance with applicable rules (e.g., Chapter 412, Subchapter D of this title (relating to Mental Health Services - Admission, Continuity, and Discharge)). These activities include~~]:

(A) assisting with admissions and discharges;

(B) facilitating access to appropriate services and supports in the community, including identifying and connecting the individual with community resources, and coordinating the provision of services;

(C) participating in developing and reviewing the individual's recovery or treatment plan [~~development and reviews~~];

(D) promoting implementation of the individual's recovery or treatment plan [~~or continuing care plan~~]; and

(E) coordinating notification of continuity of care services between the individual and the individual's family and any other person providing support as authorized by the individual and LAR, if applicable [~~facilitating coordination and follow-up between the individual and the individual's family, as well as with available community resources~~].

(14) [~~(11)~~] COPSD--Co-occurring [~~or co-occurring~~] psychiatric and substance use disorders.[~~--~~] The co-occurring diagnoses of psychiatric disorders and substance use disorders.

(15) [~~(12)~~] Credentialing--A process to review and approve a staff member's educational status, experience, and licensure status, as applicable, [~~(as applicable)~~] to ensure that the staff member meets HHSC's [~~the departmental~~] requirements for service provision. [~~The process includes primary source verification of credentials, establishing and applying specific criteria and prerequisites to determine the staff member's initial and ongoing competency and assessing and validating the staff member's qualification to deliver care. Re-credentialing is the periodic process of reevaluating the staff's competency and qualifications.~~]

(16) [~~(13)~~] Crisis--A situation in which:

(A) an [~~the~~] individual presents an immediate danger to self or others; [~~or~~]

(B) an [~~the~~] individual's mental or physical health is at risk of serious deterioration; or

(C) an individual believes the individual [~~that he or she~~] presents an immediate danger to self or others, or the individual's [~~that his or her~~] mental or physical health is at risk of serious deterioration.

(17) [~~(14)~~] Crisis services--Interventions [~~Mental health community services or other necessary interventions~~] provided to an individual in crisis.

(18) [~~(15)~~] CSSP--Community [~~or community~~] services specialist.[~~--~~] A person [~~staff member~~] who, as of August 31, 2004:

(A) received:

(i) a high school diploma; or

(ii) a high school equivalency certificate issued in accordance with the law of the issuing state;

(B) had three continuous years of documented full-time experience in the provision of mental health rehabilitative services or case management services; and

(C) demonstrated competency in the provision and documentation of mental health rehabilitative or case management services in accordance with Chapter 306 [~~419~~], Subchapter F [~~L~~] of this title (relating to Mental Health Rehabilitative Services) and Chapter 306 [~~412~~], Subchapter E [~~H~~] of this title (relating to Mental Health Case Management [~~Services~~]).

[~~(16) Cultural competency--Demonstrated knowledge and skill by a staff member to effectively respond to an individual's needs through knowledge of communication, actions, customs, beliefs, and values, within the individual's racial, ethnic, religious beliefs, disability, and social groups.~~]

[~~(17) Department--Department of State Health Services (DSHS).~~]

[~~(18) Department-approved algorithm--An evidence-based process for providing psychiatric care to adults with severe and persistent mental illnesses and children and adolescents with serious emotional disturbance, consisting of consensus-derived guidelines for medication treatment, training and support for physicians, standardized documentation, and patient and family education.~~]

(19) DSM--[~~The current edition of the~~] *Diagnostic and Statistical Manual of Mental Disorders* published by the American Psychiatric Association.

(20) Emergency care services--Community mental [~~Mental~~] health [~~community~~] services or other necessary interventions directed to address the immediate needs of an individual in crisis in order to ensure [~~assure~~] the safety of the individual and others who may be placed at risk by the individual's behaviors, including[~~, but not limited to,~~] psychiatric evaluations, administration of medications, hospitalization, stabilization or resolution of the crisis.

(21) Face-to-face--A contact with an individual that occurs in person. Face-to-face does not include contacts made through the use of video conferencing or telecommunication technologies, including telemedicine.

(22) Family member--A [~~Any~~] person identified by [~~who~~] an individual [~~identifies~~] as being a member of the individual's [~~their~~] family.

[~~(23) Family partner--An experienced, trained primary caregiver (i.e., parent of an individual with a mental illness or serious emotional disturbance) who provides peer mentoring, education, and support to the caregivers of a child who is receiving mental health community services.~~]

(23) [~~(24)~~] HIPAA--The Health Insurance Portability and Accountability Act, 42 U.S.C. §1320d et seq.

(24) HHSC--The Texas Health and Human Services Commission or its designee.

[~~(25) Identifying information--The name, address, date of birth, social security number, or any information by which the identity of an individual can be determined either directly or by reference to other publicly available information. The term includes medical records, graphs, and charts that contain an individual's information; statements made by the individual either orally or in writing while receiving mental health community services; videotapes, audiotapes, photographs, and other recorded media; and any acknowledgment that an individual is receiving or has received services from a state facility, LMHA, MCO, or provider.~~]

(25) [~~(26)~~] Indicator--A defined, measurable variable used to monitor the quality or appropriateness of an important aspect of an individual's care or service or an organization's performance of related functions, processes, or outcomes. Indicators can measure activities, events, occurrences, or outcomes for which data can be collected to allow comparison with a threshold, a benchmark, or prior performance.

(26) [~~(27)~~] Individual--A person who is seeking or receiving community mental health [~~community~~] services from or through a provider.

(27) [~~(28)~~] LAR--Legally [~~or legally~~] authorized representative. [~~--~~] A person authorized by state law to act on behalf of an individual with regard to a matter described in this subchapter[~~, including, but not limited to, a parent, guardian, or managing conservator~~].

(28) LBHA--Local behavioral health authority. An entity designated as an LBHA by HHSC in accordance with Texas Health and Safety Code §533.0356(a).

[~~(29) LCDC or licensed chemical dependency counselor--A counselor licensed by the department pursuant to the Texas Occupations Code, Chapter 504.~~]

(29) [~~(30)~~] LCSW--Licensed [~~or licensed~~] clinical social worker. [~~--~~] A person [~~staff member~~] who is licensed as a clinical social worker by the Texas State Board of Social Worker Examiners in accordance with the Texas Occupations Code[~~,~~] Chapter 505.

(30) [~~(31)~~] LMFT--Licensed [~~or licensed~~] marriage and family therapist. [~~--~~] A person [~~staff member~~] who is licensed as a licensed marriage and family therapist by the Texas State Board of Examiners of Marriage and Family Therapists in accordance with Texas Occupations Code[~~,~~] Chapter 502.

(31) [~~(32)~~] LMHA--Local [~~or local~~] mental health authority. [~~--~~] An entity designated as the LMHA [~~the local mental authority~~] by HHSC [~~the department~~] in accordance with [~~the~~] Texas Health and Safety Code[~~,~~] §533.035(a).

(32) [~~(33)~~] LOC--Level [~~or level~~] of care. [~~--~~] A designation given to services delivered under HHSC's model of community [~~the department's standardized packages of~~] mental health [~~community~~] services[~~, based on the uniform assessment and the utilization management guidelines, which recommend the type, amount, and duration of mental health community services to be provided to an individual~~].

(33) [~~(34)~~] LPC--Licensed [~~or licensed~~] professional counselor. [~~--~~] A person [~~staff member~~] who is licensed as a licensed professional counselor by the Texas State Board of Examiners of Professional Counselors in accordance with Texas Occupations Code[~~,~~] Chapter 503.

(34) [~~(35)~~] LPHA--Licensed [~~or licensed~~] practitioner of the healing arts. [~~--~~] A person [~~staff member~~] who is:

(A) a physician;

(B) an LPC [~~a licensed professional counselor (LPC)~~];

(C) an LCSW [~~a licensed clinical social worker (LCSW)~~];

(D) a psychologist;

(E) an APRN [~~advanced practice registered nurse (APRN)~~];

(F) a PA [~~physician assistant (PA)~~]; or

(G) an LMFT [~~a licensed marriage and family therapist (LMFT)~~].

(35) [~~(36)~~] LVN--Licensed [~~or licensed~~] vocational nurse. [~~--~~] A person [~~staff member~~] who is licensed as a licensed vocational nurse by the Texas Board of Nursing in accordance with Texas Occupations Code[~~,~~] Chapter 301.

(36) [~~(37)~~] Management information system--An information system designed to supply [~~an LMHA or MCO with~~] information needed to plan, organize, staff, direct, and control [~~their~~] operations and clinical decision-making.

~~[(38) MCO or managed care organization--An entity that has a current Texas Department of Insurance certificate of authority to operate as a Health Maintenance Organization (HMO) in the Texas Insurance Code, Chapter 843, or as an approved nonprofit health corporation in the Texas Insurance Code, Chapter 844, and that provides mental health community services pursuant to a contract with the department.]~~

(37) [~~(39)~~] Medical necessity--The need for a service that:

(A) is reasonable and necessary for the diagnosis or treatment of a mental illness [~~health disorder~~] or a COPSD [~~co-occurring psychiatric and substance use disorder (COPSD)~~] in order to improve or maintain an individual's level of functioning;

(B) is provided in accordance with professionally accepted clinical guidelines and standards of practice in behavioral health care;

(C) is furnished in the most clinically appropriate, available setting in which the service can be safely provided;

(D) is provided at a level that is safe and appropriate for the individual's needs and facilitates the individual's recovery; and

(E) could not be omitted without adversely affecting the individual's mental or physical health or the quality of care rendered.

(38) [~~(40)~~] Medical record--An [~~The systematic,~~] organized account[~~, compiled by health care providers,~~] of information relevant to the medical services provided to an individual, including[~~. This includes~~] an individual's history, present illness, findings on examination, treatment and discharge plans, details of direct and indirect care and services, and notes on progress.

~~[(41) Mental health community services--All services medically necessary to treat, care for, supervise, and rehabilitate individuals who have a mental illness or emotional disorder or a COPSD. These services include services for the prevention of and recovery from such disorders, but do not include inpatient services provided in a state facility.]~~

(39) [~~(42)~~] Mental illness--This term has the meaning as assigned by Texas Health and Safety Code §571.003. [~~An illness, disease, or condition (other than a sole diagnosis of epilepsy, dementia, substance use disorder, mental retardation, or pervasive developmental disorder) that:~~]

~~[(A) substantially impairs an individual's thought, perception of reality, emotional process, development, or judgment; or]~~

~~[(B) grossly impairs an individual's behavior as demonstrated by recent disturbed behavior.]~~

(40) PA--Physician assistant. A person licensed as a physician assistant by the Texas State Board of Physician Assistant Examiners in accordance with Texas Occupations Code Chapter 204.

(41) [~~(43)~~] Peer specialist [~~provider~~]--A person [~~staff member~~] who uses lived experience, in addition to skills learned in formal training, to deliver strengths-based, person-centered services to promote an individual's recovery and resiliency in accordance with 1 TAC Chapter 354, Subchapter N (relating to Peer Specialist Services).[~~:~~]

~~[(A) has received:]~~

~~*[(i)* a high school diploma; or]~~

~~*[(ii)* a high school equivalency certificate issued in accordance with the law of the issuing state;]~~

~~[(B) has at least one cumulative year of receiving mental health community services; and]~~

~~[(C) is under the direct clinical supervision of an LPHA.]~~

(42) [~~(44)~~] Physician--A person [~~staff member~~] who is:

(A) licensed as a physician by the Texas Medical Board in accordance with Texas Occupations Code [~~,~~] Chapter 155; or

(B) authorized to perform medical acts under an institutional permit at a Texas postgraduate training program approved by the Accreditation Council for Graduate Medical Education, the American Osteopathic Association, or the Texas Medical Board.

~~[(45) Physician assistant--A staff member who has specialized psychiatric/mental health training and who is licensed as a physician assistant by the Texas State Board of Physician Assistant Examiners in accordance with Texas Occupations Code, Chapter 204.]~~

(43) [~~(46)~~] Provider--A [~~Any~~] person or [~~legal~~] entity that contracts with HHSC [~~the department, an LMHA, or an MCO~~] to provide [~~mental health community~~] services under this subchapter [~~to individuals, including that part of an LMHA or MCO directly providing mental health community services to individuals. The term includes providers of mental health case management services and providers of mental health rehabilitative services~~].

(44) [~~(47)~~] Psychologist--A person [~~staff member~~] who is licensed as a psychologist by the Texas State Board of Examiners of Psychologists in accordance with Texas Occupations Code[~~,~~] Chapter 501.

(45) [~~(48)~~] QMHP-CS--Qualified mental health professional-community services. [~~or qualified mental health professional-community services--~~] A person [~~staff member~~] who is credentialed as a QMHP-CS in accordance with §301.331 of this subchapter (relating to Competency and Credentialing)[~~who has demonstrated and documented competency in the work to be performed~~] and:

(A) has completed a standardized training curriculum;

(B) has demonstrated competency in the work to be performed; and

(C) [~~(A)~~] has obtained one of the following:

(i) a bachelor's degree in one of the following disciplines from an accredited college or university: [~~with a minimum number of hours that is equivalent to a major (as determined by the LMHA or MCO in accordance with §412.316(d) of this title (relating to Competency and Credentialing)) in~~]

(I) psychology; [~~,~~]

(II) social work; [~~,~~]

(III) medicine; [~~,~~]

(IV) nursing; [~~,~~]

(V) rehabilitation; [~~,~~]

(VI) counseling; [~~,~~]

(VII) sociology; [~~,~~]

(VIII) human growth and development; [~~,~~]

(IX) physician assistant; [~~,~~]

(X) gerontology; [~~,~~]

(XI) special education; [~~,~~]

(XII) educational psychology; [~~,~~]

(XIII) early childhood education; [~~, or~~]

(XIV) early childhood intervention;

(XV) human development and family sciences;

(XVI) public health; or

(XVII) child and family welfare;

(ii) a bachelor's degree in a discipline other than those listed under clause (i) of this subparagraph from an accredited college or university with at least one year of documented experience as an intern or employee in a program that provides mental health or substance use services;

(iii) [~~(B)~~] a license as an RN [~~is a registered nurse (RN)~~]; or

(iv) a license as an LPHA.

[~~(C) completes an alternative credentialing process as determined by the LMHA or MCO in accordance with §412.316(c) and (d) of this title relating to (Competency and Credentialing).~~]

(46) [~~(49)~~] Recovery--The process of change through which an individual improves the individual's health and wellness, lives a self-directed life, and strives to reach the individual's full potential [~~by which a person becomes able or regains the ability to live, work, learn, and participate fully in his or her community~~].

(47) Re-credentialing--The periodic process of re-evaluating a staff member's competency and qualifications.

(48) [~~(50)~~] Referral--The process of identifying appropriate services and providing the information and assistance needed to access them.

[~~(51) RN or registered nurse--A staff member who is licensed as a registered nurse by the Texas Board of Nursing in accordance with Texas Occupations Code, Chapter 301.~~]

(49) [~~(52)~~] Restraint--This term has the [~~The~~] same meaning as defined in Chapter 320 [~~415~~], Subchapter C [~~F~~] of this title (relating to Interventions in Mental Health Services [~~Programs~~]).

(50) RN--Registered nurse. A person who is licensed as a registered nurse by the Texas Board of Nursing in accordance with Texas Occupations Code Chapter 301.

(51) [~~(53)~~] Routine care services--Community mental [~~Mental~~] health [~~community~~] services provided to an individual who is not in crisis.

(52) Screening--Activities to:

(A) collect triage information through interviews with an individual or collateral contact;

(B) determine if the individual's need is emergent, urgent, or routine; and

(C) determine the need for an assessment.

[~~(54) Safety monitoring--Ongoing observation of an individual to ensure the individual's safety. An appropriate staff person must be continuously present in the individual's immediate vicinity, provide ongoing monitoring of the individual's mental and physical status, and ensure rapid response to indications of a need for assistance or intervention. Safety monitoring includes maintaining continuous visual contact with frequent face-to-face contacts as needed.~~]

[~~(55) Screening Activities performed by a Qualified Mental Health Professional--Community Services (QMHP-CS) to gather triage information to determine the need for in-depth assessment. The QMHP-CS collects this information through face-to-face or telephone interviews with the individual or collateral. This service includes screenings to determine if the individual's need is emergent, urgent, or routine (which is conducted prior to the face-to-face assessment to determine the need for emergency services).~~]

(53) [~~(56)~~] Seclusion--This term has the [~~The~~] same meaning as defined in Chapter 320 [~~415~~], Subchapter C [~~F~~] of this title (relating to Interventions in Mental Health Services).

(54) SED--Serious emotional disturbance. A disorder that meets the criteria described in Texas Government Code §547.0051.

(55) [~~(57)~~] Staff member--Provider personnel, including a full-time and part-time employee, contractor, or intern, but excluding a volunteer [~~Anyone who works or provides services for an LMHA, MCO, or provider as an employee, contractor, intern, or volunteer~~].

(56) [~~(58)~~] Support services--Services [~~Mental health community services~~] delivered to an individual, the individual's LAR, or family member, as applicable, [~~member(s)~~] to assist the individual in functioning in the individual's chosen living, learning, working, and socializing environments.

(57) TAC--Texas Administrative Code.

(58) [~~(59)~~] Telemedicine--The use of health care information exchanged from one site to another via electronic communications for the health and education of the individual or provider, and for the purpose of improving patient care, treatment, and services. This definition applies only for purposes of this subchapter and does not affect, modify, or relate in any way to other rules defining the term or regulating the service, or to any statutory definitions or requirements.

(59) [~~(60)~~] Uniform assessment--An assessment tool adopted [~~developed~~] by HHSC under §301.353 of this subchapter (relating to Provider Responsibilities for Treatment Planning and Service Authorization) used for recommending an individual's LOC [~~the department that includes, but is not limited to, the Adult Texas Recommended Assessment Guidelines (TRAG), the Children and Adolescent Texas Recommended Assessment Guidelines, and the department-approved algorithms~~].

(60) [(61)] Urgent care services--Services [Mental health community services] or other necessary interventions provided to persons in crisis who do not need emergency care services, but who are potentially at risk of serious deterioration.

(61) [(62)] Utilization management exception--The authorization of additional amounts of services based on medical necessity when an [the] individual has reached the maximum service units of the individual's [their] currently authorized LOC [level of care (LOC)].

(62) [(63)] Utilization management guidelines--HHSC-developed guidelines [Guidelines developed by the department] that establish the type, amount, and duration of community mental health [community] services for each LOC.

(63) [(64)] Volunteer--A person who receives no remuneration for the provision of time, individual attention, or assistance to individuals receiving community mental health [community] services from entities or providers governed by this subchapter. [Volunteers may include:]

[(A) community members;]

[(B) family members of individuals served when not acting in their capacity as a family member;]

[(C) employees when not acting in their capacity as employees; and]

[(D) individuals served when acting on behalf of another individual.]

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502493
Karen Ray
Chief Counsel
Health and Human Services Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (737) 704-9063

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SUBCHAPTER G. MENTAL HEALTH COMMUNITY SERVICES STANDARDS
DIVISION 1. GENERAL PROVISIONS

26 TAC §301.305

STATUTORY AUTHORITY

The repeal is authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, Texas Health and Safety Code §533.0345(a), which requires the executive commissioner of HHSC to by rule develop model program standards for mental health services for use by each state agency that provides or pays for mental health services; Texas Health and Safety Code §533.0356(i), which allows the executive commissioner of HHSC to adopt rules to govern the operations of local behavioral health authorities; and Texas Health and Safety Code §534.052(a), which requires the executive commissioner of HHSC to adopt rules, including standards, the executive commissioner considers necessary and appropriate to ensure the adequate provision of community-based mental health services through an LMHA under Texas Health and Safety Code Chapter 534.

The repeal affects Texas Government Code §524.0151 and Texas Health and Safety Code §533.0345(a), §533.0356(i), and §534.052(a).

§301.305. Responsibility for Compliance.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Chief Counsel
Health and Human Services Commission
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For further information, please call: (737) 704-9063

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SUBCHAPTER G. COMMUNITY MENTAL HEALTH [COMMUNITY] SERVICES STANDARDS
DIVISION 2. ORGANIZATIONAL STANDARDS

26 TAC §§301.321, 301.323, 301.327, 301.329, 301.331, 301.333, 301.335

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, Texas Health and Safety Code §533.0345(a), which requires the executive commissioner of HHSC to by rule develop model program standards for mental health services for use by each state agency that provides or pays for mental health services; Texas Health and Safety Code §533.0356(i), which allows the executive commissioner of HHSC to adopt rules to govern the operations of local behavioral health authorities; and Texas Health and Safety Code §534.052(a), which requires the executive commissioner of HHSC to adopt rules, including standards, the executive commissioner considers necessary and appropriate to ensure the adequate provision of community-based mental health services through an LMHA under Texas Health and Safety Code Chapter 534.

The amendments affect Texas Government Code §524.0151 and Texas Health and Safety Code §533.0345(a), §533.0356(i), and §534.052(a).

§301.321. Leadership.

(a) Organizational planning and communication. The LMHA and LBHA [MCO] must define and implement organizational plans and systems as described in this subchapter, such as a quality management plan or utilization management plan, [(e.g., quality management plan, utilization management plan)] and ensure that there are mechanisms in place that facilitate effective communication throughout the organization to promote the provision of quality community mental health [community] services.

(b) Management of key processes and functions. The LMHA and LBHA [~~MCO~~] must define organizational and clinical processes and functions, including performance activities, as well as:

(1) allocate adequate, appropriate resources; and

(2) provide oversight for such processes and functions.

(c) Management information system. The LMHA, LBHA [~~MCO~~], and provider must ensure their management information systems provide timely, accurate, and accessible information that supports clinical, administrative, and fiscal decision-making.

(d) Consumer advocacy. The LMHA and LBHA [~~MCO~~] must encourage and support advocacy for individuals accessing community mental health [~~community~~] services.

(e) Conflict of interest and dual relationships. The LMHA and LBHA [~~MCO~~] must develop and implement policies and procedures to ensure that all staff members refrain from activities and relationships whereby personal, financial, professional, or other relationships could compromise or interfere with independent judgment creating a conflict of interest or otherwise having the potential to harm or exploit individuals and families.

(f) Collaboration with other health care agencies and community resources. The LMHA and LBHA [~~MCO~~] must demonstrate efforts to collaborate with other health care agencies and community resources to address the physical and behavioral health care needs of individuals, as well as to ensure that these needs are met.

§301.323. Environment of Care and Safety.

(a) Safe environment. The LMHA, LBHA [~~MCO~~], and provider must:

(1) ensure service delivery sites, including facilities and vehicles, [~~(including, but not limited to, facilities and vehicles)~~] are safe, sanitary, and free from hazards, including [~~but not limited to~~]:

(A) hand washing facilities and supplies in restrooms and in areas where staff have routine physical contact with individuals, such as an exam room, medication area, or laboratory [~~(e.g., exam rooms, medication areas, laboratories)~~];

(B) a utility area with necessary equipment for the safe and required cleaning or disposal of instruments, equipment, and sharps;

(C) locked areas for storing drugs, needles, syringes, hazardous materials, other potentially dangerous equipment, and toxic chemical products; and

(D) adequate prevention of exposure to tobacco smoke and other environmental pollutants; [~~.~~]

(2) ensure delivery sites are prepared to manage onsite life-threatening [~~life threatening~~] emergencies, and that each site will have:

(A) a written plan for the management of onsite medical emergencies requiring ambulance services, hospitalization, or hospital treatment;

(B) emergency resuscitative drugs, supplies, and equipment appropriate to the needs of individuals and staff qualifications;

(C) written protocols and instructions for disasters and other emergencies; and

(D) documented disaster drills appropriate for local conditions; [~~.~~]

(3) comply with the most current edition of the National Fire Protection Association's Life Safety Code, and related codes, standards, and other applicable requirements;

(4) implement an infection control plan and procedures for group residential services, clinics, and other areas where a high volume of people congregate, that address the prevention, education, management, and monitoring of significant infections in accordance with applicable state and federal laws. [~~Components addressed in the plan must include:~~]

[~~(A) prevention and management of infection in the service delivery site(s);~~]

[~~(B) reporting of reportable diseases as required by Chapter 97, Subchapter A of this title (relating to Control of Communicable Diseases);~~]

[~~(C) compliance with the Human Immunodeficiency Virus Services Act (Texas Health and Safety Code, §85.001 et seq.), the Communicable Disease Prevention and Control Act (Texas Health and Safety Code, §81.001 et seq.), and other applicable laws (e.g., the Americans with Disabilities Act of 1990, 42 U.S.C. §12101 et seq.; and the Rehabilitation Act of 1973, 29 U.S.C. §701 et seq.);~~]

[~~(D) identification of illnesses and conditions for which an individual's participation in mental health community services is safely allowed;~~]

[~~(E) identification of illnesses and conditions for which an individual's participation in mental health community services is restricted and the procedures for minimizing exposure and facilitating an individual's transfer to a more appropriate setting;~~]

[~~(5) implement safeguards regarding hazardous equipment and weather; and~~]

[~~(6) implement procedures for the disposal of biohazardous wastes that minimize the risks of contamination, injury, and disease transmission.~~]

(b) Sufficient staff. The provider must have sufficient [~~number of~~] qualified and competent staff members on duty to ensure the safety of individuals and adequacy of community mental health [~~community~~] services, including responding to crises during the provision of community mental health [~~community~~] services.

[~~(c) Compliance with state and federal law. The provider must comply with all applicable state and federal law and regulations, including those relating to:~~]

[~~(1) blood borne pathogens;~~]

[~~(2) food borne pathogen exposure controls; and~~]

[~~(3) tuberculosis exposure controls.~~]

(c) [~~(d)~~] Use [~~Limited use~~] of restraint or seclusion.

[~~(1)~~] [~~Restraint.~~] In outpatient settings, a provider may only use restraint or seclusion as described in Chapter 320, Subchapter C of this title (relating to Interventions in Mental Health Services). [~~if the intervention is:~~]

[~~(A) necessary to address a behavioral health emergency, as defined in Chapter 415, Subchapter F of this title (relating to Interventions in Mental Health Programs); and~~]

[~~(B) performed according to the department's rules described in Chapter 415, Subchapter F of this title.~~]

[~~(2) Seclusion. Seclusion is prohibited in outpatient settings with the exception of partial hospitalization programs for children~~

~~or adolescents. A provider may only use seclusion in those programs if the conditions in paragraph (1)(A) - (B) of this subsection are met.~~]

§301.327. Access to Community Mental Health [~~Community~~] Services.

(a) Adequate provider network. The LMHA and LBHA [~~MCO~~] must maintain a provider network that is adequate and qualified to provide all community mental health [~~community~~] services that the LMHA and LBHA [~~MCO~~] are required to provide under a contract with HHSC [~~the department~~].

(b) Crisis screening and response system. The LMHA and LBHA [~~MCO~~] must have a crisis screening and response system in operation 24 hours a day, every day of the year, that is available to individuals throughout its contracted service delivery area. The telephone system to access the crisis screening and response system must include a toll-free crisis hotline number and be easily accessible and well publicized. Calls to the crisis hotline must be answered by a hotline staff member who is trained in compliance with this subchapter. The hotline must have teletypewriter (TTY) capabilities or other assistive technology that is available and effective.

(c) Telephone access. In addition to the crisis screening and response system described in subsection (b) of this section, the LMHA and LBHA [~~MCO~~] must ensure the availability of a telephone system and call center that allows individuals to contact the LMHA or LBHA [~~MCO~~] through a toll-free number that must:

(1) operate without using telephone answering equipment at least on business days during normal business hours, except on national holidays, due to uncontrollable interruption of service, or with prior approval of HHSC [~~the department~~];

(2) have sufficient staff to operate efficiently;

(3) collect, document, and store detailed information, including special needs information, on all telephone inquiries and calls;

(4) during times other than those described in paragraph (1) of this subsection provide electronic call answering methods that include an outgoing message providing the crisis hotline telephone number, in languages relevant to the service area, for callers to leave a message; and

(5) return routine calls before the end of the next business day for all messages left after hours.

(d) Timely services based on need. The LMHA or LBHA [~~local behavioral health authority (LBHA), as defined at Texas Health and Safety Code §533.0356~~] must arrange mental health services for an individual within the following time frames.

(1) Crisis services.

(A) Hotline calls. For all calls to the toll-free crisis hotline:

(i) a staff member must answer each call within 30 seconds, on average, at least 95 percent of the time;

(ii) the LMHA, LBHA, or their subcontractors must train a staff member in crisis screening to conduct a crisis hotline screening as provided in the LMHA's [~~LMHAs'~~] and LBHA's [~~LBHAs'~~] contract with HHSC [~~the Texas Health and Human Services Commission~~]; and

(iii) if the staff member determines the call is a potential crisis, a staff member trained in crisis screening, in accordance with clause (ii) of this subparagraph, must begin a telephone screening no later than one minute after the determination is made.

(B) Emergency care services. If a staff member determines during a screening that an individual is experiencing a crisis that may require emergency care services, the staff member trained in crisis screening, in accordance with subparagraph (A)(ii) of this paragraph, must:

(i) take immediate action to address the emergency situation to ensure the safety of all parties involved;

(ii) activate the immediate screening and assessment processes as described in §301.351 of this subchapter (relating to Crisis Services); and

(iii) provide or obtain community mental health [~~community~~] services or other necessary interventions to stabilize the crisis.

(C) Urgent care services. If the screening indicates that an individual needs urgent care services, a QMHP-CS must within eight hours of the initial incoming hotline call or notification of a potential crisis situation:

(i) perform a face-to-face assessment; and

(ii) provide or obtain community mental health [~~community~~] services or other necessary interventions to stabilize the crisis.

(2) Routine care services. If the screening indicates that an individual needs routine care services, a QMHP-CS must perform a uniform assessment within 14 days after the screening. If the assessment indicates an LOC for routine care services, the individual must begin receiving services immediately. When the provision of the service package is not possible because services are at capacity, the individual must be referred to an available practitioner appropriate to meet the individual's needs or be placed on a waiting list for services, subject to the following exceptions:

(A) individuals eligible for Medicaid who are determined to be in need of mental health case management services [~~Mental Health Case Management~~], under Chapter 306, Subchapter E of this title (relating to Mental Health Case Management), or mental health rehabilitative services [~~Mental Health Rehabilitative Services~~], under Chapter 306, Subchapter F of this title (relating to Mental Health Rehabilitative Services), cannot be placed on a waiting list and must be served; and [~~.~~]

(B) individuals eligible for Medicaid who are determined to need services other than mental health case management services [~~Mental Health Case Management~~], under Chapter 306, Subchapter E of this title, and mental health rehabilitative services [~~Mental Health Rehabilitative Services~~], under Chapter 306, Subchapter F of this title, must be referred to appropriate, available practitioners of that service. Only if an appropriate Medicaid practitioner is not available may the individual be placed on a waiting list. All efforts undertaken to refer Medicaid individuals must be documented.

(e) Communication with individuals. The LMHA, LBHA [~~MCO~~], and provider must ensure effective communication with the individual and LAR, if applicable, [~~(if applicable)~~] in an understandable format as appropriate to meet the needs of individuals, which may require using:

(1) interpretative services;

(2) translated materials; or

(3) a staff member who can communicate effectively with [~~respond to the cultural (e.g., customs, beliefs, actions, and values) and language needs of~~] the individual and LAR, if applicable [~~(if applicable)~~].

(f) Service information. The LMHA and LBHA [~~MCO~~] must proactively disseminate to an individual and LAR, if applicable, [~~individuals and their LAR (if applicable)~~] information about mental illness and the LMHA's or LBHA's community [~~MCO's~~] mental health [~~community~~] services in a format and language that is easily understood and based on the demographics for any group comprising more than 10 percent of the population in the local service area. Information about mental illness and the LMHA's or LBHA's [~~MCO's~~] community services must be in a format and language that is accessible [~~easily understood~~] by individuals with a disability, such as deafness, hard of hearing, and blindness[~~(e.g., deafness, hard of hearing, and blindness)~~].

(g) Access to emergency medical and crisis services. The LMHA and LBHA [~~MCO~~] must develop procedures providers can [~~for its providers'~~] use to access [~~in accessing~~] emergency medical and crisis services for individuals.

(h) Continuity of care [~~services~~]. The LMHA and LBHA [~~MCO~~] must ensure that individuals:

(1) are provided continuity of care [~~services~~] as defined by this chapter [~~the department~~]; and

(2) are informed of whom to contact regarding continuity of care and the coordination of services for the individual [~~their services~~], in accordance with Chapter 306[~~412~~], Subchapter D of this title (relating to Mental Health Services--Admission, Discharge, [~~Continuity,~~] and Continuity of Care [~~Discharge~~]).

(i) Referral for physical health services. If a uniform [~~nursing or medical~~] assessment indicates physical health needs outside the scope of the provider's competency, credentialing, or capacity to treat, the LMHA and LBHA [~~MCO~~] must make and document appropriate referrals to other healthcare providers and provide adequate follow up at subsequent visits to confirm access to the referrals.

§301.329. Medical Records System.

(a) Maintenance of medical records. The LMHA, LBHA [~~MCO~~], and [~~the~~] provider must ensure:

(1) protection against unauthorized access, disclosure, modification or destruction of medical records, whether accidental or deliberate;

(2) the availability, integrity, utility, authenticity, and confidentiality of information within the medical record;

(3) a current, organized, legible, and comprehensive records system that:

(A) conforms to good professional practice;

(B) permits effective clinical review and audit; and

(C) facilitates prompt and systematic retrieval of information;

(4) a medical records system [~~with sufficient redundancy~~] to ensure access to individual records; and

(5) compliance with applicable federal and state laws, rules, and regulations, including HIPAA and[~~,~~] 42 CFR Part 2[~~, and the requirements described in Chapter 414, Subchapter A of this title (relating to Protected Health Information)~~].

(b) Disaster recovery plan. The LMHA, LBHA [~~MCO~~], and [~~the~~] provider must maintain a written disaster recovery plan for information resources that will ensure service continuity as required by applicable state and federal laws.

§301.331. Competency and Credentialing.

(a) Competency of staff members and[~~, including~~] volunteers. The LMHA, LBHA [~~MCO~~], and provider must implement a process to ensure the competency of staff members prior to providing services that, at a minimum:

(1) ensures services are provided by staff members who are operating within the scope of their license, job description, or contract specification;

(2) ensures that the community mental health [~~community~~] services provided by peer specialists [~~providers~~] are limited to mental health rehabilitative, supported employment, supported housing, parent support group, and CFP [~~family partner~~] services; [~~and~~]

(3) defines competency-based expectations for each position as follows:

(A) required competencies must be included for all staff members, including adequate, accurate knowledge of:

(i) the nature of serious [~~severe and persistent~~] mental illness, as defined in §306.305 of this title (relating to Definitions), and SEDs [~~serious emotional disturbances~~];

(ii) HHSC's utilization management guidelines [~~the recovery and resiliency model of mental illness and serious emotional disturbance~~];

(iii) the dignity and rights of an individual, as described in Chapter 320 [~~404~~], Subchapter A [~~E~~] of this title (relating to Rights of Individuals [~~Persons~~] Receiving Mental Health Services);

(iv) identifying, preventing, and reporting abuse, neglect, and exploitation, in accordance with [~~Chapter 414,~~] Subchapter M [~~L~~] of this chapter [~~title~~] (relating to Abuse, Neglect, and Exploitation in Local Authorities and Community Centers);

(v) individual client privacy and confidentiality, as described in HIPAA [~~Chapter 414, Subchapter A of this title (relating to Protected Health Information)~~] and other relevant state and federal laws affecting confidentiality of medical records, including [~~Title~~] 42 CFR Part 2 and Texas Health and Safety Code Chapter 611;

(vi) interacting with an individual who has a physical disability such as a hearing or visual impairment;

(vii) responding to an individual's language and cultural needs [~~through knowledge of customs, beliefs, and values of various, racial, ethnic, religious, and social groups~~];

(viii) exposure control of bloodborne [~~blood borne~~] pathogens;

(ix) identification of an individual as being in a crisis and accessing emergency or urgent care services;

(x) proper documentation of services provided; and

(xi) planning and training for responding to severe weather, disasters, and bioterrorism;

(B) critical competencies must be included for positions in which a staff member's primary job duties are related to individual service contacts and interactions, including [~~and include, but are not limited to,~~] adequate and accurate knowledge of:

(i) cardiopulmonary [~~cardio pulmonary~~] resuscitation (CPR);

(ii) first aid;

(iii) safe management of verbally and physically aggressive behavior;

(iv) utilization of assistive technology such as communication devices with individuals who are deaf or hard of hearing; and

(v) seizure response and assessment;

(C) specialty competencies must be included for positions in which a staff member performs specialized services and tasks and include adequate and accurate knowledge of specialized services and tasks, such as:

(i) the requirements of this subchapter;

(ii) age appropriate clinical assessment including the uniform assessment;

(iii) age appropriate engagement techniques, such as motivational interviewing[(e.g., motivational interviewing)];

(iv) use of telemedicine equipment;

(v) HHSC's [the] utilization management guidelines;

(vi) developing and implementing an individualized treatment plan;

(vii) appropriate actions to take in a crisis, such as screening, intervention, management, and, if applicable, suicide or homicide precautions [(e.g., screening, intervention, management and if applicable, suicide/homicide precautions)];

(viii) services for co-occurring psychiatric and substance use disorders described in Chapter 306 [411], Subchapter A [N] of this title (relating to Standards for Services to Individuals with Co-Occurring Psychiatric and Substance Use Disorders (COPSD));

(ix) accessing resources within the local community;

(x) strategies for effective advocacy and referral for an individual;

(xi) infection control;

(xii) recognition, reporting, and recording of side effects, contraindications, and drug interactions of psychoactive medication;

(xiii) age appropriate rehabilitative approaches;

(xiv) proficiency in specimen collection;

(xv) the peer-provider or consumer-operated service model;

(xvi) assessment and intervention with children, adolescents, and families; and

(xvii) clinical specialties directly related to the services to be performed; [.]

(D) crisis hotline competencies must be included for positions in which a staff member routinely answers the crisis hotline and include adequate and accurate knowledge of:

(i) the nature of serious [severe and persistent] mental illness, as defined in §306.305 of this title (relating to Definitions), SEDs, [and serious emotional disturbances] and COPSD;

(ii) behavioral health crisis situations;

(iii) operating a telephone system to access behavioral health crisis screening and response;

(iv) age appropriate crisis intervention and response;

(v) utilization of assistive technology such as communication devices with individuals who are deaf or hard of hearing;

(vi) advocacy for treatment in the most clinically appropriate, available environment; and

(vii) applicable privacy laws, rules, and regulations including those described in HIPAA, [Chapter 414, Subchapter A of this title (relating to Protected Health Information) and in Title] 42 CFR Part 2, and Texas Health and Safety Code Chapter 611; and [.]

(E) telemedicine competencies must be included for positions in which a staff member's job duties are related to assisting with telemedicine services and include adequate and accurate knowledge of:

(i) operation of the telemedicine equipment; and

(ii) how to use the equipment to adequately present the individual; and [.]

(4) requires staff members to demonstrate competencies in the following manner:

(A) all staff members must demonstrate required competencies before contact with individuals, confidential information, or protected health information and periodically throughout the staff member's tenure of employment or association with the LMHA, LBHA [MCO], or provider;

(B) all staff members in positions that require critical competencies must demonstrate the critical competencies before contact with individuals and periodically throughout the staff member's or volunteer's tenure of employment or association with the LMHA, LBHA [MCO], or provider;

(C) all staff members in positions that require specialty competencies must demonstrate the specialty competencies before providing the specialized services [service(s)] or performing the specialized tasks [task(s)] and periodically throughout the staff member's or volunteer's tenure of employment or association with the LMHA, LBHA [MCO], or provider; and

(D) all staff members in positions that require crisis hotline competencies must demonstrate those competencies before providing crisis hotline services and at least annually throughout the staff member's or volunteer's tenure of employment or association with the LMHA, LBHA [MCO], or provider.

(b) Competency of crisis services providers. The LMHA and LBHA [MCO] must develop and implement policies and procedures governing the provision of crisis services to ensure that providers with which they contract or employ for the provision of crisis services are trained in:

(1) crisis access and age appropriate assessment and intervention services;

(2) advocacy for the most clinically appropriate, available environment; and

(3) community referral resources.

(c) Credentialing and appeals. Before providing services, the LMHA and LBHA [MCO] must:

(1) implement a timely credentialing and re-credentialing process for all its licensed staff members, peer specialists [providers], CFPs [family partners], and every QMHP-CS and CSSP;

(2) ensure that documentation verifying a staff member's credentialing and re-credentialing is maintained in the staff member's personnel records;

(3) have a process for staff members to appeal credentialing and re-credentialing decisions; and

(4) require providers to:

(A) use the LMHA's or LBHA's [~~MCO's~~] credentialing and re-credentialing and appeals processes for all of the provider's licensed staff, QMHP-CSs, CSSPs, peer specialists [~~providers~~], CFPs [~~family partners~~], and utilization management job functions; or

(B) implement a credentialing and re-credentialing process for all of the provider's licensed staff members [~~staff~~], QMHP-CSs, CSSPs, peer specialists [~~providers~~], CFPs [~~family partners~~], and utilization management job functions that meets the LMHA's or LBHA's [~~MCO's~~] credentialing and re-credentialing criteria and have a process for those staff members to appeal credentialing and re-credentialing decisions.

(d) Requirements [~~Additional requirements~~] for credentialing as a QMHP-CS. For credentialing as a QMHP-CS who is not an RN or an LPHA [~~a registered nurse~~], the credentialing and re-credentialing process described in subsection (c) of this section must include:

(1) verifying the requirements listed in §301.303(45)(A) - (C)(i) and (ii) of this subchapter (relating to Definitions) [~~determining the minimum number of coursework hours that is equivalent to a major and whether a combination of coursework hours in the specified areas is acceptable~~];

[~~(2) reviewing the individual's coursework;~~] and

(2) [~~(3)~~] justifying and documenting the credentialing decisions. [~~; or~~]

[~~(4) completing an alternative credentialing process identified by the department.~~]

(e) Requirements [~~Additional requirements~~] for credentialing as a CSSP. For credentialing as a CSSP, the credentialing and re-credentialing process described in subsection (c) of this section must include:

(1) verifying a high school diploma or high school equivalent certificate issued in accordance with the law of the issuing state;

(2) verifying three continuous years of documented full-time experience in the provision of mental health case management or rehabilitative services before [~~prior to~~] August 31, 2004;

(3) reviewing the staff member's provision and documentation of mental health case management or rehabilitative services; and

(4) certifying, justifying, and documenting the credentialing decisions.

(f) Requirements [~~Additional requirements~~] for credentialing as a peer specialist [~~provider~~]. For credentialing as a peer specialist [~~provider~~], the credentialing and re-credentialing process described in subsection (c) of this section must include the peer specialist qualifications described in 1 TAC Chapter 354, Subchapter N (relating to Peer Specialist Services). [~~or the alternative credentialing by an organization recognized by the department must, at minimum, include:~~]

[~~(1) verifying a high school diploma or high school equivalent certificate issued in accordance with the law of the issuing state;~~]

[~~(2) verifying at least one cumulative year of receiving mental health community services for a disorder that is treated in the target population for Texas;~~]

[~~(3) demonstration of competency in the provision and documentation of mental health rehabilitative services, supported employment, or supported housing; and~~]

[~~(4) justifying and documenting the credentialing decisions.~~]

(g) Requirements [~~Additional requirements~~] for utilization management job functions. For credentialing as a staff member who performs utilization management job functions, the credentialing and re-credentialing process described in subsection (c) of this section must include:

(1) the staff member's job description indicating the performance of utilization management functions;

(2) if the staff member is not the utilization management physician, the staff member's job description indicating the staff member does not [~~they neither~~] provide services or [~~nor~~] supervise service providers;

(3) documenting licenses;

(4) documenting training and supervision received; and

(5) justifying and documenting credentialing decisions.

(h) Maintaining documented personnel information. The LMHA, LBHA [~~MCO~~], and provider must maintain personnel files for each staff member that include:

(1) a current, signed job description for each staff member;

(2) documented, periodic performance reviews;

(3) copies of current credentials and training; and

(4) criminal background checks.

(i) The LMHA, LBHA, and provider must also comply with any applicable Medicaid requirements.

§301.333. Quality Management.

(a) Quality management plan. The LMHA and LBHA [~~MCO~~] must develop a written quality management plan that includes:

(1) the quality management program description and work plan;

(2) measurable objective indicators to detect the need for improvement;

(3) procedures and timelines for taking appropriate action when problems are identified; and

(4) approval by the LMHA or LBHA [~~MCO~~] governing body.

(b) Quality management program. The LMHA and LBHA [~~MCO~~] must implement a quality management program that includes:

(1) a structure that ensures the program is implemented system-wide;

(2) allocation of adequate resources for implementation;

(3) oversight by professionals with adequate and appropriate experience in quality management;

(4) activities and processes that address identified clinical and organizational problems including fidelity and data integrity;

(5) periodic reporting of quality management program activities to its governing body, providers and other appropriate staff members and community stakeholders such as peer and family organizations;

(6) processes to systematically monitor, analyze, and improve performance of provider services and outcomes for individuals;

(7) review of the provider's treatment to determine:

(A) whether the provider has a plan for compliance with [~~it is consistent with the department's approved~~] evidenced-based practices [~~and the fidelity manual~~]; and

(B) the accuracy of assessments and treatment planning;

(8) ongoing monitoring of the quality of crisis services, access to services, service delivery, and continuity of care [~~services~~];

(9) provision of technical assistance to providers related to quality oversight necessary to improve the quality and accountability of provider services;

(10) use of reports and data from HHSC [~~the department~~] to inform performance improvement activities and assessment of unmet needs of individuals, service delivery problems, and effectiveness of authority functions for the local service area;

(11) mechanisms to measure, assess, and reduce incidents of abuse, neglect, and exploitation and to improve individuals' rights protection processes;

[~~(12) mechanisms to improve individuals' rights protection processes;~~]

(12) [~~(13)~~] risk management processes such as competency determinations, and the management and reporting of incidents and deaths; and

(13) [~~(14)~~] coordination of activities and information management with the utilization management [~~(UM)~~] program, including participation in utilization management [~~UM~~] oversight activities.

(c) The LMHA and LBHA [~~MCO~~] must establish an integrated system to sufficiently monitor the quality management program for effectiveness on a regular basis and update the quality management plan as needed.

§301.335. Utilization Management.

(a) Utilization management plan. The LMHA and LBHA [~~MCO~~] must develop a written utilization management plan that includes:

(1) the utilization management program plan description and work plan;

(2) requirements relating to the utilization management committee credentials, job functions, meetings, and training;

(3) how the utilization management program's effectiveness in meeting goals will be evaluated;

(4) how improvements will be made on a regular basis;

(5) the oversight and control mechanisms to ensure that utilization management [~~UM~~] activities meet required standards when the LMHA and LBHA delegate utilization management activities to a subcontractor [~~they are delegated to an administrative services organization or a DSHS-approved entity~~]; and

(6) approval by the LMHA or LBHA [~~MCO~~] governing body.

(b) Utilization management program. The LMHA and LBHA [~~MCO~~] must implement a utilization management program under the direction of a psychiatrist licensed in Texas as required by its contract with HHSC [~~the department~~], and in accordance with HHSC's [~~the~~] utilization management guidelines, as updated and amended.

(c) Authorization of services. The LMHA and LBHA [~~MCO~~] must ensure that it has an [~~a timely~~] authorization system in place to ensure medically necessary services are delivered without delay and with prior authorization, except that the delivery of crisis services does not require prior authorization but rather must be authorized after service [~~subsequent to~~] delivery. The LMHA and LBHA [~~MCO~~] will review requests for authorization of services, determine if services should be authorized and if so which services to authorize. Services must be authorized using HHSC's [~~the department's~~] utilization management guidelines and based on the uniform assessment, diagnosis, additional clinical information submitted by the requestor, and clinical judgment. The determination and documentation of services to be authorized will occur according to the following timeframes:

(1) crisis intervention services--within two business days of the date of service;

(2) inpatient services--immediately [~~within sufficient time~~] to ensure medically necessary services are delivered without delay;

(3) all other community mental health [~~community~~] services, including outpatient and add-on services upon receipt but no later than three business days and prior to service delivery; and

(4) reauthorization for continuing services according to established timeframes in the utilization management guidelines, as updated and amended.

(d) Appeal and Medicaid fair hearing procedures. The LMHA and LBHA [~~MCO~~] must implement procedures to give notice of the right to a timely and objective appeal process for all individuals receiving community mental health services, in accordance with §301.155 [~~§401.464~~] of this chapter [~~title~~] (relating to Notification and Appeals Process). For individuals eligible for Medicaid, the LMHA and LBHA [~~MCO~~] must implement procedures that provide notice of the right to request a fair hearing, as described in 1 TAC [~~Title 1,~~] Chapter 357, Subchapter A (relating to Uniform Fair Hearing Rules [~~for the Medicaid, TANF, and Food Stamp Programs~~]), to an individual whose service or benefits are denied, reduced, suspended, or terminated. [~~The procedures regarding notice of the right to a Medicaid fair hearing must comply with department policy, which may be included in contract provisions.~~]

(e) Waiting list maintenance requirements. The LMHA and LBHA must comply with [~~the department's policy on~~] waiting list maintenance requirements as described[~~, which may be included in contract provisions and is subject to the requirements set forth~~] in §301.327(d)(2) [~~§412.314(d)(2)~~] of this subchapter [~~title~~] (relating to Access to Community Mental Health [~~Community~~] Services).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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Karen Ray
Chief Counsel
Health and Human Services Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (737) 704-9063

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SUBCHAPTER G. MENTAL HEALTH COMMUNITY SERVICES STANDARDS
DIVISION 2. ORGANIZATIONAL STANDARDS

26 TAC §301.325

STATUTORY AUTHORITY

The repeal is authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, Texas Health and Safety Code §533.0345(a), which requires the executive commissioner of HHSC to by rule develop model program standards for mental health services for use by each state agency that provides or pays for mental health services; Texas Health and Safety Code §533.0356(i), which allows the executive commissioner of HHSC to adopt rules to govern the operations of local behavioral health authorities; and Texas Health and Safety Code §534.052(a), which requires the executive commissioner of HHSC to adopt rules, including standards, the executive commissioner considers necessary and appropriate to ensure the adequate provision of community-based mental health services through an LMHA under Texas Health and Safety Code Chapter 534.

The repeal affects Texas Government Code §524.0151 and Texas Health and Safety Code §533.0345(a), §533.0356(i), and §534.052(a).

§301.325. Rights and Protection.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Karen Ray
Chief Counsel
Health and Human Services Commission
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For further information, please call: (737) 704-9063

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SUBCHAPTER G. COMMUNITY MENTAL HEALTH [~~COMMUNITY~~] SERVICES STANDARDS

DIVISION 3. STANDARDS OF CARE

26 TAC §§301.351, 301.353, 301.355, 301.357, 301.359, 301.361, 301.363

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, Texas Health and Safety Code §533.0345(a), which requires the executive commissioner of HHSC to by rule develop model program standards for mental health services for use by each state agency that provides or pays for mental health services; Texas Health and Safety Code §533.0356(i), which allows the executive commissioner of HHSC to adopt rules to govern the operations of local behavioral health authorities; and Texas Health and Safety Code §534.052(a), which requires the executive commissioner of HHSC to adopt rules, including standards, the executive commissioner considers necessary and appropriate to ensure the adequate provision of community-based mental health services through an LMHA under Texas Health and Safety Code Chapter 534.

The amendments affect Texas Government Code §524.0151 and Texas Health and Safety Code §533.0345(a), §533.0356(i), and §534.052(a).

§301.351. Crisis Services.

(a) Coordinating provision of crisis services. The LMHA and LBHA [~~MCO~~] must develop and implement policies and procedures governing the provision of crisis services that:

(1) identify providers' roles and responsibilities in responding to a crisis;

(2) describe the coordination of crisis services to be required among providers of crisis services, law enforcement, the judicial system, and other community entities; and

(3) comply with Chapter 306 [~~419~~], Subchapter F [~~L~~] of this title (relating to Mental Health Rehabilitative Services).

(b) Immediate screening and assessment.

(1) Screening and assessment. All providers of crisis services must be available 24 hours a day, every day of the year, to perform immediate screenings and assessments of individuals in crisis, including assessments to determine risk of deterioration and immediate danger to self or others. Crisis assessments cannot be delegated to law enforcement officials.

(2) QMHP-CS assessment. Individuals experiencing a crisis, as determined by a QMHP-CS screening, must be assessed face-to-face or via telemedicine by someone who is at least credentialed as a QMHP-CS within one hour after the individual presents to the provider in a crisis, either via the crisis hotline or a face-to-face encounter [~~(e.g., walk-in)~~]. The QMHP-CS must provide ongoing crisis services until the crisis is resolved or the individual is placed in a clinically appropriate environment.

(c) LPHA consultation. An LPHA must always be available for consultation with the QMHP-CS.

(d) Physician assessment. If the individual requires emergency care services, as determined by the QMHP-CS's assessment of risk of deterioration and danger as described in subsection (b) of this section, then the provider of crisis services must have a physician, preferably a psychiatrist, perform a face-to-face or telemedicine assessment of the individual as soon as possible, but not later than 12 hours after the QMHP-CS's assessment to determine the need for emergency services.

(e) Documenting crisis services. The provider of crisis services must maintain documentation of the crisis services, including:

(1) the date the service was provided;

(2) the beginning and end time of the crisis contact;

(3) the individual's name and any other identifiable health [~~identifying~~] information, as defined by HIPAA [~~of the individual to whom the service was provided (if given)~~];

(4) the location where the service was provided;

(5) the behavioral description of the presenting problem, including: [~~;~~]

(A) [~~(6)~~] lethality, such as suicide or violence[~~(e.g., suicide, violence)~~];

(B) [~~(7)~~] substance use [~~or abuse~~]; and

(C) [~~(8)~~] trauma, abuse, or neglect;

(6) [~~(9)~~] the outcome of the crisis [~~(e.g., individual in hospital, individual with friend and scheduled to see doctor at 9:00 a.m. the following day)~~];

(7) [~~(10)~~] the names and titles of staff members involved;

(8) [~~(11)~~] all actions, including rehabilitative interventions and referrals to other agencies, [~~(including rehabilitative interventions and referrals to other agencies)~~] used by the provider to address the problems presented;

(9) [~~(12)~~] the response of the individual, and if appropriate, the response of the LAR and family members;

(10) [~~(13)~~] the signature of the staff member providing the service and a notation as to whether the staff member is an LPHA or a QMHP-CS;

(11) [~~(14)~~] any pertinent event or behavior relating to the individual's treatment which occurs during the provision of the service; and

(12) [~~(15)~~] follow up activities, which may include referral to another provider.

(f) Communication of crisis contacts. If an individual who is currently receiving mental health services has experienced a crisis and has been assessed in accordance with subsection (b) of this section, the provider of crisis services must communicate in writing [~~(e.g., e-mail or fax)~~] the details of the crisis contact to the provider of ongoing mental health services to ensure that the individual receives continuity of care and treatment and include such communication in the medical record. This crisis contact communication:

(1) may not disclose any substance use-related [~~abuse-related~~] information unless disclosed in compliance with federal law as described in 42 CFR Part 2;

(2) must take place no later than the next business day after conclusion of the crisis contact; and

(3) may disclose mental health information for the purpose of continuity of care and treatment without the individual's consent if disclosure is made in accordance with:

(A) Texas Health and Safety Code[~~,~~] §533.009 (relating to Exchange of Patient and Client Records), when the provider of ongoing services is part of HHSC's [~~the department's~~] service delivery system; or

(B) in accordance with Texas Health and Safety Code[~~,~~] §611.004(a)(7) [~~(relating to the Authorized Disclosure of Confidential Information other than in Judicial or Administrative Proceeding)~~], when the provider of ongoing services is not part of HHSC's [~~the department's~~] service delivery system.

§301.353. Provider Responsibilities for Treatment Planning and Service Authorization.

(a) Assessment and documentation. At the first routine face-to-face or telemedicine contact with an individual seeking routine care services, as described in §301.327(d)(2) [~~§412.314(d)(2)~~] of this subchapter [~~title~~] (relating to Access to Community Mental Health [~~Community~~] Services[~~,~~]) a QMHP-CS with appropriate supervision and training must perform an assessment of the individual. The assessment must be documented and must include:

(1) the individual's identifiable health [~~identifying~~] information, as defined by HIPAA;

(2) completion of the appropriate uniform assessment [~~assessment(s)~~] and assessment guideline calculations;

(3) present status and relevant history, including education, employment, housing, legal, military, developmental, and current available social and support systems;

(4) co-occurring mental illness, emotional disturbance, substance use [~~abuse~~], chemical dependency, or developmental disorder;

(5) relevant past and current medical and psychiatric information, which may include trauma history;

(6) information from the individual and LAR, if applicable, [~~(if applicable)~~] regarding the individual's strengths, needs, natural supports, description of [~~describe~~] community participation, responsiveness to previous treatment, as well as preferences for and objections to specific treatments;

(7) if the individual is an adult without an LAR, the needs and desire of the individual for family member involvement in treatment and community mental health [~~community~~] services;

(8) the identification of the LAR's or family members' need for education and support services related to the individual's mental illness or emotional disturbance and the plan to facilitate the LAR's or family members' receipt of the needed education and support services;

(9) recommendations and conclusions regarding treatment needs; and

(10) date, signature, and credentials of staff member completing the assessment.

(b) Diagnostics. The diagnosis of a mental illness must be:

(1) rendered by an LPHA, acting within the scope of his/her license, who has interviewed the individual, either face-to-face or via telemedicine;

(2) based on the DSM;

(3) documented in writing, including the date, signature, and credentials of the person making the diagnosis; and

(4) supported by and included in the assessment.

(c) Provision of services. The LMHA, LBHA [~~MCO~~], and provider must require each provider to implement procedures to ensure that individuals are provided community mental health [~~community~~] services based on:

(1) HHSC's [~~the department's~~] uniform assessment and utilization management guidelines;

(2) medical necessity as determined by an LPHA; and

(3) health management needs as determined by a physician, PA [~~physician assistant~~], or RN [~~registered nurse~~].

(d) Prerequisites to provision of services.

(1) Routine care services. For routine care services, before providing community mental health [~~community~~] services to an individual, the provider must:

[~~(A) obtain authorization from the department or its designee for the type(s), amount, and duration of mental health community services to be provided to the individual in accordance with the appropriate uniform assessment and utilization management guidelines;~~]

(A) [~~(B)~~] obtain a determination of medical necessity from an LPHA; and

(B) [~~(C)~~] in collaboration with the individual and [~~their~~] LAR, if applicable[~~(if applicable)~~], develop a treatment plan for the individual that includes a list of the types [~~type(s)~~] of community mental

health [~~community~~] services [~~authorized in accordance with subparagraph (A) of this paragraph~~].

(2) Crisis services. For crisis services, as described in §301.351 [~~§412.321~~] of this subchapter [~~title~~] (relating to Crisis Services), a provider must deliver services in accordance with the utilization management guidelines and authorization of services and timeframes described in §301.335(c) [~~§412.318(c)~~] of this subchapter [~~title~~] (relating to Utilization Management). A diagnosis is not required when services are delivered in crisis situations.

(e) Treatment [~~Content and timeframe of treatment~~] plan. The [~~Each~~] provider must develop a written treatment plan, in consultation with the individual and their LAR, if applicable[~~(if applicable)~~], within 10 business days after the date of receipt of notification from HHSC [~~the department~~] or its designee that the individual is eligible and has been authorized for routine care services.

(1) A [~~At minimum, a~~] staff member with minimum credentialing [~~credentialed~~] as a QMHP-CS is responsible for completing and signing the treatment plan. The treatment plan must reflect input from each of the disciplines of treatment to be provided to the individual based upon the assessment. The treatment plan must include:

(A) a description of the presenting problem;

(B) a description of the individual's strengths;

(C) a description of the individual's needs arising from the mental illness or SED[~~serious emotional disturbance~~];

(D) a description of the individual's co-occurring substance use or physical health disorder, if any;

(E) a description of the recovery goals and objectives based upon the assessment, and expected outcomes of the treatment in accordance with paragraph (2) of this subsection;

(F) the expected date by which the recovery goals will be achieved;

(G) a list of resources for recovery supports, such as community volunteer opportunities, family or peer organizations, 12-step programs, churches, colleges, or community education[~~(e.g., community volunteer opportunities, family or peer organizations, 12-step programs, churches, colleges, or community education)~~]; and

(H) a list of the types [~~type(s)~~] of services within each discipline of treatment that will be provided to the individual, such as psychosocial rehabilitation, medication services, substance use treatment, or supported employment [~~(e.g., psychosocial rehabilitation, medication services, substance abuse treatment, supported employment)~~], and for each type of service listed, provide:

(i) a description of the strategies to be implemented by staff members in providing the service and achieving goals;

(ii) the frequency, such as weekly, twice a month, or monthly [~~(e.g., weekly, twice a month, monthly)~~], number of units, such as 10 counseling sessions or two skills training sessions [~~(e.g., 10 counseling sessions, two skills training sessions)~~], and duration of each service to be provided, such as .5 hour or 1.5 hours [~~(e.g., .5 hour, 1.5 hours)~~]; and

(iii) the credentials of the staff member responsible for providing the service.

(2) The goals and objectives with expected outcomes required by paragraph (1)(E) of this subsection must:

(A) specifically address the individual's unique needs, preferences, experiences, and cultural background;

(B) specifically address the individual's co-occurring substance use or physical health disorder, if any;

(C) be expressed in terms of overt, observable actions of the individual;

(D) be objective and measurable using quantifiable criteria; and

(E) reflect the individual's self-direction, autonomy, and desired outcomes.

(3) The individual and LAR, if applicable, [~~(if applicable)~~] must be provided a copy of the treatment plan and each subsequent treatment plan reviewed and revised.

(f) Review of treatment plan.

(1) Each provider must:

(A) review the individual's treatment plan prior to requesting an authorization for the continuation of services;

(B) review the treatment plan in its entirety, as permitted under confidentiality laws by considering input from the individual, the individual's LAR, if applicable[~~(if applicable)~~], and each of the disciplines of treatment;

(C) determine if the plan is adequately addressing the needs of the individual; and

(D) document progress on all goals and objectives and any recommendation for continuing services, any change from current services, and any discharge from services.

(2) In addition to the required review under paragraph (1) of this subsection, a provider may review the treatment plan in the following instances:

(A) if clinically indicated; and

(B) at the request of the individual or the LAR, if applicable [~~(if applicable)~~], or the primary caregiver of a child or adolescent.

(3) Any time the treatment plan is reviewed, the provider must:

(A) meet with the individual either face to face or via telemedicine to solicit and consider input from the individual regarding a self-assessment of progress toward the recovery goals, as described in subsection (e)(1)(E) of this section;

(B) solicit and consider the input from each of the disciplines of treatment in assessing the individual's progress toward the recovery goals and objectives with expected outcomes, described in subsection (e)(1)(E) of this section;

(C) solicit and consider input from the LAR, if applicable, [~~(if applicable)~~] or primary caregiver, if the individual is a child or adolescent regarding the level of satisfaction with the services provided; and

(D) document all the input described in subparagraphs (A) - (C) of this paragraph.

(g) Revisions to the treatment plan. If, after any review of the treatment plan, the provider determines it does not adequately address the needs of the individual, the provider must appropriately revise the content of the plan.

(h) Discharge Summary. Not later than 21 calendar days after an individual's discharge, whether planned or unplanned, the provider must document in the individual's medical record:

(1) a summary, based upon input from all the disciplines of treatment involved in the individual's treatment plan, of all the services provided, the individual's response to treatment, and any other relevant information;

(2) recommendations made to the individual or their LAR, if applicable, [(~~if applicable~~)] for follow up services, if any; and

(3) the individual's last diagnosis, based on the DSM.

§301.355. Medication Services.

(a) Prescribing of psychoactive medication. The LMHA and LBHA [~~MCO~~] must ensure that psychoactive medication is prescribed in accordance with Chapter 320 [~~415~~], Subchapter D [~~A~~] of this title (relating to Prescribing of Psychoactive Medication).

(b) Medication service delivery. The LMHA, LBHA [~~MCO~~], and provider must implement written procedures to ensure safe medication-related service delivery that include[, ~~but are not limited to,~~] the following.

(1) A procedure for physician delegation of medical acts to non-physicians. The procedure must address delegation protocols to APRNs or PAs [~~advanced practice nurses and/or physician assistants~~], delegation of medical acts to nursing or [~~and/or~~] unlicensed staff members, and the frequency of physician supervision over the staff member to whom a delegation is made. The procedure must provide a method to ensure the staff members are acting within the scope of their license and are [~~is~~] qualified and trained to perform the medical act.

(2) A procedure for RNs to make assignments to LVNs or delegate to unlicensed staff members nursing acts for the care of stable individuals with common, well-defined health problems with predictable outcomes. The procedure must address the types of nursing acts that may be delegated, the method to ensure the staff member is trained and qualified to perform a delegated nursing act, and the frequency of nursing supervision of the unlicensed staff member in accordance with Texas Occupations Code[,] Chapter 301[(~~relating to the Nursing Practice Act~~)].

(3) A procedure for medication administration by licensed medical or nursing staff that addresses who may access and administer medications, timely administration, documentation of administration, and monitoring of administration, and that complies with applicable professional licensing standards and rules.

(4) A procedure for medication handling that addresses:

(A) dispensing;

(B) labeling and record keeping of sample medications;

(C) limiting access to physician stock medications;

(D) patient assistance or indigent [~~assistance/indigent~~] medication program;

(E) mechanisms to ensure safe temperature-controlled storage and transport of medication;

(F) controlled substances [~~drugs~~];

(G) disposal or destruction [~~disposal/destruction~~] of medication; and

(H) locked areas and maintaining security.

(5) A procedure by which a physician, a PA [~~physician's assistant~~], or an RN assesses and determines whether an individual can self-administer medication and whether it can be done without supervision.

(6) A procedure for training and assessing the competency of staff members to perform supervision of self-administration of medication, including:

(A) medication actions;

(B) target symptoms;

(C) understanding prescription labels;

(D) potential toxicity;

(E) side effects;

(F) adverse reactions;

(G) proper storage of medications; and

(H) reporting and documentation requirements.

(7) A procedure for providing appropriate supervision of staff members who are supervising self-administration of medication.

(8) A procedure for medication errors that defines the most common types of medication errors and provides for:

(A) the accurate documentation of medication errors;

(B) the reporting of medication errors to the physician within one hour of their occurrence;

(C) a mechanism for determining medication error trends;

(D) a mechanism for analyzing both individual medication errors and trends for quality improvement; and

(E) the reporting of medication errors, as appropriate.

§301.357. Additional Standards of Care Specific to Community Mental Health [~~Community~~] Services for Children and Adolescents.

(a) Administration of the uniform assessment. In accordance with HHSC's utilization management guidelines, the [~~The~~] uniform assessment must be administered face-to-face or via telemedicine with the individual and the LAR, if applicable, [(~~if applicable~~)] or primary caregiver as clinically appropriate according to the child's or adolescent's age, functioning, and current living situation.

(b) Age and developmentally appropriate community mental health [~~community~~] services. All community mental health [~~community~~] services delivered to children and adolescents by a provider must be, for each child and adolescent, age-appropriate, developmentally appropriate, and consistent with academic development.

(c) Separation of individuals by age. A provider that delivers community mental health [~~community~~] services to children and adolescents in group settings [(~~e.g., residential, day programs, group therapy, partial hospitalization, and inpatient~~)] must separate children and adolescents from adults. The provider must further separate children from adolescents according to age and developmental needs, unless there is a clinical or developmental justification in the medical record.

(d) Transition to community mental health [~~community~~] services for adults. The provider must develop a transition plan for each adolescent who will need community mental health [~~community~~] services as [~~for~~] adults. The transition plan must be developed in consultation with the adolescent and the LAR, if applicable, [(~~and LAR if applicable~~)] and future providers with adequate time to allow both current and future providers to transition the adolescent into adult services without a disruption in services. [~~The transition plan must include:~~]

[~~(1) a summary of the mental health community services and treatment the adolescent received as a child and adolescent;~~]

[(2) the adolescent's current status (e.g., diagnosis, medications, uniform assessment guideline calculation, and unmet needs);]

[(3) information from the adolescent and the LAR regarding the adolescent's strengths, preferences for mental health community services, and responsiveness to past interventions;]

[(4) a description of the mental health community services the adolescent will receive as an adult;]

[(5) a list of resources for other recovery supports such as volunteer opportunities, family or peer organizations, 12-step programs, churches, colleges, or community education;]

[(6) documentation that the adolescent's services continued throughout the transition without disruptions; and]

[(7) documentation of the follow up to ensure successful transition to adult services.]

§301.359. Telemedicine Services.

The LMHA, LBHA [MCO], and provider must ensure that if a provider uses telemedicine, it is implemented in accordance with written procedures and using a protocol approved by the LMHA's or LBHA's [MCO's] medical director. Procedures regarding the provision of telemedicine service must include the following requirements:

(1) clinical oversight by the LMHA's or LBHA's [MCO's] medical director or designated physician responsible for medical leadership;

(2) contraindications for telemedicine use;

(3) qualified people at the remote site to ensure the safety of the individual being served by telemedicine [at the remote site]; and

(4) use by credentialed or licensed providers who provide clinical care within the scope of the provider's [their] credential or license.

§301.361. Documentation of Service Provision.

(a) Progress note content. Except for crisis services as described in §301.351 [§412.321] of this subchapter [title] (relating to Crisis Services) and day programs for acute needs as described in Chapter 306 [419], Subchapter F [L] of this title (relating to Mental Health Rehabilitative Services), and case management services as described in Chapter 306 [412], Subchapter E [I] of this title (relating to Mental Health Case Management Services), a provider must document the provision of all other community mental health [community] services, each service encounter and include at least the following:

(1) the name of the individual to whom the service was provided, including the LAR or primary caregiver, if applicable;

(2) the type of service provided;

(3) the date the service was provided;

(4) the begin and end time of the service;

(5) the location where the service was provided;

(6) a summary of the activities that occurred;

(7) the modality of the service provision, such as individual or group [(e.g., individual, group)];

(8) the method of service provision, such as face-to-face, phone, or telemedicine [(e.g., face-to-face, phone, telemedicine)];

(9) the training methods used, if applicable, such as instructions, modeling, role play, feedback, or repetition [(e.g., instructions, modeling, role play, feedback, repetition)];

(10) the title of the curriculum being used, if applicable;

(11) the treatment plan objectives [objective(s)] that were [was] the focus of the service;

(12) the progress or lack of progress in achieving treatment plan goals;

(13) the signature of the staff member providing the service and a notation as to whether the staff member is an LPHA, a QMHP-CS, a pharmacist, a CSSP, an LVN, a peer specialist [provider] or otherwise credentialed, as required for that service; and

(14) any pertinent event or behavior relating to the individual's treatment which occurs during the provision of the service.

(b) Frequency of documentation. The documentation required in subsection (a) of this section must be made within two business days after each contact that occurs to provide community mental health [community] services.

(c) Retention. Documentation must be retained in compliance with applicable federal and state laws, rules, and regulations.

§301.363. Supervision.

The LMHA, LBHA, and provider must follow the supervision requirements in 1 TAC §353.1419 (relating to Supervision Requirements).

[(a) Clinical supervision. Clinical supervision must be accomplished by an LPHA or a QMHP-CS as follows:]

[(1) by conducting a documented meeting with the staff member being supervised at least monthly; and]

[(2) for peer providers, by conducting an additional monthly documented observation of the peer provider providing mental health community services.]

[(b) Policies and procedures. The LMHA or MCO will develop and implement written policies and procedures for supervision of all applicable levels of staff members providing services to individuals.]

[(c) Licensed staff member supervision. All licensed staff members must be supervised in accordance with their practice act and applicable rules.]

[(d) QMHP-CS supervision. A QMHP-CS's designated clinical duties must be clinically supervised by:]

[(1) a QMHP-CS; or]

[(2) an LPHA if the QMHP-CS is clinically supervising the provision of mental health community services.]

[(e) CSSP supervision. A CSSP's designated clinical duties must be clinically supervised by a QMHP-CS. The CSSP must have access to clinical consultation with an LPHA when necessary.]

[(f) Family partner supervision. A family partner is supervised by the mental health children's director, clinic director, case management supervisor, or wraparound supervisor.]

[(g) Peer provider supervision. A peer provider's designated clinical duties must be clinically supervised by an LPHA.]

[(h) Peer review. The LMHA, MCO, and provider must implement a peer review process for licensed staff members that:]

[(1) promotes sound clinical practice;]

[(2) promotes professional growth; and]

[(3) complies with applicable state laws (e.g., Medical Practice Act, Nursing Practice Act, Vocational Nurse Act) and rules.]

~~[(i) Documentation. All clinical supervision must be documented.]~~

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Karen Ray
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Health and Human Services Commission
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For further information, please call: (737) 704-9063

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CHAPTER 559. DAY ACTIVITY AND HEALTH SERVICES REQUIREMENTS
SUBCHAPTER H. INDIVIDUALIZED SKILLS AND SOCIALIZATION PROVIDER REQUIREMENTS

The Executive Commissioner of the Texas Health and Human Services Commission (HHSC) proposes amendments to §§559.201, 559.203, 559.205, 559.215, 559.225, 559.227, 559.241, and 559.243; new §§559.226, 559.228, 559.253, 559.255, and 559.257; and the repeal of §559.239.

BACKGROUND AND PURPOSE

The purpose of the proposal is to integrate heightened health and safety standards--specifically addressing environmental safety concerns--bolster the rights of individuals receiving individualized skills and socialization services and implement Texas Health and Safety Code §253.0025 (established by House Bill 1009, 88th Legislature, Regular Session, 2023) regarding suspension of employees during due process for reportable conduct. The proposal also establishes alternative pathways to address infractions through administrative penalties, thereby offering providers remedial options beyond license revocation.

The proposal further seeks to clarify existing requirements governing the prevention and investigation of abuse, neglect, or exploitation and to delineate provider requirements and criteria for license issuance or renewal. Additionally, non-substantive grammatical revisions are intended to enhance clarity and coherence within the regulatory framework.

The proposal ensures the efficacy and integrity of environmental safety and the rights of individuals receiving services, establishes administrative penalties services provided under Texas Administrative Code, Title 26, Chapter 559, Subchapter H, and upholds the importance of individual welfare and regulatory compliance.

SECTION-BY-SECTION SUMMARY

The proposed amendment to §559.201, Purpose, incorporates information regarding additional health and safety requirements.

The proposed amendment to §559.203, Definitions, adds definitions for "abuse," "actual harm," "applicant," "cause to believe," "Centers for Medicare and Medicaid Services (CMS)," "exploitation," "immediate threat," "incident," "isolated," "neglect," "pattern," "substantial violation," "widespread," and edits existing definitions for clarity and understanding. It also relocates and revises the definition of "complaint" from §559.243.

The proposed amendment to §559.205, Criteria for Licensing, updates a reference and reflects changes specific to licensing processes regarding HHSC reviewing background and qualifications and issuing temporary licenses for Day Activity and Health Services Individualized Skills and Socialization Only licensure applications.

The proposed amendment to §559.215, Criteria for Denying a License or Renewal of a License, corrects references and revises language to provide clarity and ensure providers are aware of the requirement to disclose all actions to HHSC, whether pending or final.

The proposed amendment to §559.225, General Requirements, makes non-substantive grammatical changes, relocates rule language pertaining to individual rights under proposed new §559.228, adds language necessary to satisfy Texas Health and Safety Code §253.0025 requirements regarding reportable conduct, and outlines individual information documentation requirements.

Proposed new §559.226, Environmental Safety Requirements, describes standards for the physical condition of the location where on-site individualized skills and socialization services are provided, including cleanliness, safety, accessibility, utilities, and maintenance of both interior and exterior areas to ensure the well-being of individuals receiving services.

The proposed amendment to §559.227, Program Requirements, clarifies which requirements providers must follow when providing transportation and determining appropriate settings for service delivery. It also requires an individualized skills and socialization provider to provide services that meet an individual's needs and person-centered objectives, including by following steps for when a modification or restriction of services is needed. It further provides ongoing training parameters to address timeframes and frequency of trainings. Additionally, the amendment clarifies medication record requirements.

Proposed new §559.228, Rights of Individuals, describes the rights of individuals receiving services from individualized skills and socialization providers. It sets forth individualized skills and socialization provider requirements concerning the protection of individuals' rights, including those related to informed decision-making and the filing of grievances. It further requires the development and implementation of policies and procedures to address individuals' service plans; right to live free from abuse, neglect, and exploitation; receive services in a safe and clean environment; enjoy privacy during treatment and care for personal needs; and participate in activities.

The proposed repeal of §559.239, Definitions of Abuse, Neglect, and Exploitation, removes a rule section that is no longer needed, as these definitions have been added to §559.203.

The proposed amendment to §559.241, Reporting Abuse, Neglect, Exploitation, or Incidents to HHSC, revises the title to Reporting Abuse, Neglect, or Exploitation to HHSC. The amendment clarifies reporting requirements for abuse, neglect, or exploitation to HHSC and the requirement to report the death of an individual when the death occurs while the individual is receiving services from an individualized skills and socialization provider. It further establishes language prohibiting retaliation against an individual, legally authorized representative, or service provider for filing a complaint or presenting a grievance or for providing,

in good faith, information to HHSC relating to abuse, neglect, or exploitation.

The proposed amendment to §559.243, HHSC Complaint Investigation, removes language regarding reporting Abuse, Neglect, Exploitations, or Incidents to HHSC Complaint and Incident Intake, as this language is included in revised §559.241, as well as language regarding certain internal practices of HHSC. It also deletes the definition of "complaint," as it is now located in §559.203, Definitions, and renumbers the subsections accordingly.

Proposed new §559.253, Administrative Penalties, describes the circumstances in which HHSC may impose administrative penalties on an individualized skills and socialization provider and the HHSC procedure for administrative penalties. It also describes how penalties may be applied for various violations, with factors such as severity and corrective efforts considered, and provides that administrative penalties do not preclude other disciplinary actions for the same violation.

Proposed new §559.255, Individualized Skills and Socialization Provider Compliance and Corrective Action, describes procedures an individualized skills and socialization provider must adhere to in order to maintain compliance with regulations and address corrective measures under the oversight of HHSC. It describes the processes involving follow-up surveys, notices of non-compliance, corrective plans, monitoring, and potential penalties or license actions imposed by HHSC for violations.

Proposed new §559.257, Administrative Hearings, describes the process for administrative hearings regarding administrative penalties imposed on individualized skills and socialization providers. It describes hearing procedures, findings by administrative law judges, penalty assessments or dismissals by the executive commissioner, payment requirements, and interest accrual on unpaid penalties.

FISCAL NOTE

Trey Wood, Chief Financial Officer, has determined that for each year of the first five years that the rules will be in effect, there may be an increase in revenue to state government as a result of enforcing and administering the rules as proposed.

HHSC is unable to determine the increase in state revenue because any assessed administrative penalties collected are dependent on each individualized skills and socialization provider's compliance with regulatory requirements.

GOVERNMENT GROWTH IMPACT STATEMENT

HHSC has determined that during the first five years that the rules will be in effect:

(1) the proposed rules will not create or eliminate a government program;

(2) implementation of the proposed rules will not affect the number of HHSC employee positions;

(3) implementation of the proposed rules will result in no assumed change in future legislative appropriations;

(4) the proposed rules will require an increase in fees paid to the agency;

(5) the proposed rules will create new regulations;

(6) the proposed rules will expand and repeal existing regulations;

(7) the proposed rules will not change the number of individuals subject to the rules; and

(8) HHS system has insufficient information to determine the effect of the proposed rules on the state's economy.

SMALL BUSINESS, MICRO-BUSINESS, AND RURAL COMMUNITY IMPACT ANALYSIS

Trey Wood has also determined there could be an adverse economic effect on small businesses or micro-businesses, or rural communities.

HHSC estimates that the number of small businesses, micro-businesses, and rural communities subject to the proposed rules is over 900. This is the number of providers licensed to provide individualized skills and socialization services. While an individualized skills and socialization provider's noncompliance with the proposed regulations may result in administrative penalties, HHSC does not have sufficient data to estimate the cost to those businesses. The penalties range from $0 to $500 for initial or repeat non-substantial violations, and $250 to $800 for initial or repeat substantial violations. It is also unknown how many administrative penalties will be collected by HHSC.

HHSC determined that alternative methods to achieve the purpose of the proposed rules for small businesses, micro-businesses, or rural communities would not be consistent with ensuring the health and safety of individuals receiving individualized skills and socialization services.

LOCAL EMPLOYMENT IMPACT

The proposed rules will not affect the local economy.

COSTS TO REGULATED PERSONS

Texas Government Code §2001.0045 does not apply to these rules because the rules are necessary to protect the health, safety, and welfare of the residents of Texas and are necessary to implement legislation that does not specifically state that §2001.0045 applies to the rules.

PUBLIC BENEFIT AND COSTS

Stephen Pahl, Deputy Executive Commissioner for Regulatory Services, has determined that for each year of the first five years the rules are in effect implementation of these amendments, new sections, and repeal the public benefits will be enhanced oversight of day activity and community integration services for individuals with intellectual disabilities. The rules are anticipated to foster greater foresight and precautionary measures, thereby bolstering the protection of individual health, safety, and welfare. The public will benefit from the introduction of clearly defined terms and the inclusion of provisions pertaining to administrative penalties, which may serve as an incentive for providers to adhere to the regulations outlined in this chapter.

Trey Wood has also determined that for the first five years the rules are in effect, licensed individualized skills and socialization providers may incur costs related to compliance, should they be assessed administrative penalties.

TAKINGS IMPACT ASSESSMENT

HHSC has determined that the proposal does not restrict or limit an owner's right to the owner's property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking under Texas Government Code §2007.043.

PUBLIC COMMENT

Written comments on the proposal may be submitted to Rules Coordination Office, P.O. Box 13247, Mail Code 4102, Austin, Texas 78711-3247, or street address 4601 West Guadalupe Street, Austin, Texas 78751, or emailed to HHSRulesCoordinationOffice@hhs.texas.gov.

To be considered, comments must be submitted no later than 31 days after the date of this issue of the *Texas Register*. Comments must be (1) postmarked or shipped before the last day of the comment period; (2) hand-delivered before 5:00 p.m. on the last working day of the comment period; or (3) emailed before midnight on the last day of the comment period. If the last day to submit comments falls on a holiday, comments must be postmarked, shipped, or emailed before midnight on the following business day to be accepted. When emailing comments, please indicate "Comments on Proposed Rule 24R021" in the subject line.

DIVISION 1. INTRODUCTION

26 TAC §559.201, §559.203

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §531.0055, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services agencies; §531.021, which provides HHSC with the authority to administer federal funds and plan and direct the Medicaid program in each agency that operates a portion of the Medicaid program; and §531.033, which provides the executive commissioner of HHSC with broad rule-making authority; and Texas Human Resources Code §32.021, which provides that HHSC adopt rules necessary for the proper and efficient operation of the Medicaid program; and §103.004, which requires the executive commissioner of HHSC to adopt rules and set standards implementing Chapter 103.

The amendments implement Texas Government Code §§531.0055, 531.021, and 531.033, and Texas Human Resources Code §§32.021, 103.004, and 103.005.

§559.201. Purpose.

(a) The purpose of this subchapter is to:

(1) establish licensing procedures, standards, and requirements for an individualized skills and socialization provider licensed as a Day Activity and Health Services (DAHS) facility in accordance with Texas Human Resources Code Chapter 103; and

(2) establish health and safety requirements for a provider licensed by the Texas Health and Human Services Commission to deliver individualized skills and socialization services, including:

(A) environmental safety;

(B) prevention and investigation of abuse, neglect, or exploitation; and

(C) general and program provider requirements.

(b) This subchapter applies to an individualized skills and socialization provider and the provision of on-site and off-site individualized skills and socialization services.

(c) This subchapter does not apply to:

(1) a DAHS facility providing services in the DAHS program; or

(2) the provision of in-home individualized skills and socialization in the Home and Community-based Services and Texas Home Living waiver programs.

§559.203. Definitions.

The following words and terms, when used in this subchapter, have the following meanings, unless the context clearly indicates otherwise.

(1) Abuse--Intentional or negligent act that results in physical or emotional harm or pain to an individual by an individualized skills and socialization provider or an employee, a contractor, or a volunteer of an individualized skills and socialization provider, including;

(A) injury;

(B) confinement;

(C) intimidation;

(D) cruel punishment; or

(E) sexual abuse, including:

(i) any sexual conduct conducted by a direct provider of individualized skills and socialization services that would constitute an offense under Penal Code §21.08 (relating to Indecent Exposure); or

(ii) any sexual conduct conducted by a direct provider of individualized skills and socialization services that would constitute an offense under Penal Code, Chapter 22 (relating to Assaultive Offenses), committed by a direct provider of individualized skills and socialization services.

(2) Actual harm--A negative outcome that compromises the physical, emotional, or mental well-being of any individual receiving services from the individualized skills and socialization provider.

(3) Applicant--A person or entity seeking licensing through the Texas Health and Human Services Commission (HHSC) to provide individualized skills and socialization services.

(4) Cause to believe--An individualized skills and socialization provider knows, suspects, or receives an allegation regarding abuse, neglect, or exploitation.

(5) Centers for Medicare and Medicaid Services (CMS)--The federal agency within the United States Department of Health and Human Services (HHS) that administers Medicare and Medicaid programs.

(6) [~~(1)~~] Change of ownership--An event that results in a change to the federal taxpayer identification number of the license holder [~~of a facility~~]. The substitution of a personal representative for a deceased license holder is not a change of ownership.

(7) [~~(2)~~] Community setting--A setting accessible to the general public within an individual's community.

(8) Complaint--Any allegation received by HHSC regarding abuse, neglect, or exploitation of an individual or a violation of Texas Human Resources Code Chapter 103 or a rule, standard, or order adopted under Texas Human Resources Code Chapter 103.

(9) [~~(3)~~] Day Activity and Health Services (DAHS) directory--A public list generated and maintained by [~~the~~] HHSC, listing all DAHS providers, including individualized skills and socialization providers.

(10) [~~(4)~~] Deaf Blind with Multiple Disabilities (DBMD) program--A waiver program operated by HHSC, as authorized by CMS [~~the Centers for Medicare & Medicaid Services (CMS)~~] in accordance with §1915(c) of the Social Security Act.

(11) Exploitation--An illegal or improper act or process of using resources belonging to an individual receiving services by an individualized skills and socialization provider or an employee, a contractor, or a volunteer of an individualized skills and socialization provider without informed consent from the individual or the individual's legally authorized representative (LAR) for personal or monetary benefit.

(12) [~~(5)~~] Home and Community-based Services (HCS) program--A waiver program operated by HHSC as authorized by CMS in accordance with §1915(c) of the Social Security Act.

(13) Immediate threat--A situation that causes, or is likely to cause, injury, harm, impairment, or death of an individual.

(14) [~~(6)~~] Implementation plan--In the HCS and TxHmL programs, a written document developed by a program provider outlining the outcomes, [~~and~~] objectives, frequency, and duration for each program service on the individual's IPC to be provided by the program provider.

(15) Incident--Any non-routine occurrence that has an impact on the care, supervision, or treatment of an individual receiving services, as described in accordance with HHSC guidance.

(16) [~~(7)~~] Individual--A person who applies for or is receiving services from an individualized skills and socialization provider.

(17) [~~(8)~~] Individual plan of care (IPC)--A written plan authorized by HHSC that states the type and amount of each DBMD, TxHmL, or HCS program service to be provided to the individual during an IPC year.

(18) [~~(9)~~] Individual program plan (IPP)--In the DBMD program, a written plan documented on an HHSC form and completed by an individual's case manager that describes the goals and outcomes for each DBMD program service and Community First Choice (CFC) service, other than CFC support management, included on the individual's IPC.

(19) [~~(10)~~] Individualized skills and socialization--A DBMD, TxHmL, or HCS program service described in §260.503 of this title (relating to Description of Individualized Skills and Socialization), §262.905 of this title (relating to Description of On-Site and Off-Site Individualized Skills and Socialization), or §263.2005 of this title (relating to Description of On-Site and Off-Site Individualized Skills and Socialization). The two types of individualized skills and socialization are on-site individualized skills and socialization and off-site individualized skills and socialization.

(20) [~~(11)~~] Individualized skills and socialization provider--A provider licensed as a DAHS provider by HHSC to provide individualized skills and socialization services. A provider of individualized skills and socialization services is considered an individualized skills and socialization provider once licensed.

(21) [~~(12)~~] In person or in-person--Within the physical presence of another person who is awake. In person or in-person does not include using videoconferencing or a telephone.

(22) Isolated--Describing a violation of Texas Human Resources Code Chapter 103 or a rule, standard, or order adopted under Texas Human Resources Code Chapter 103 by an individualized skills and socialization provider that affects a very limited number of individuals receiving services and that:

(A) involves a very limited number of service providers; or

(B) has only occurred occasionally.

(23) [~~(13)~~] Legally authorized representative (LAR)--A person authorized by law to act on behalf of another person regarding [~~with regard to~~] a matter described in this subchapter, including a parent, guardian, or managing conservator of a minor; a guardian of an adult; an agent appointed under a power of attorney; or a representative payee appointed by the Social Security Administration. An LAR, such as an agent appointed under a power of attorney or representative payee appointed by the Social Security Administration, may have limited authority to act on behalf of a person.

(24) [~~(14)~~] License holder--A person who holds a license as an individualized skills and socialization provider.

(25) Neglect--Failure to provide an individual receiving services with identified health and safety services necessary to avoid infliction of injury, physical or emotional harm, or pain to an individual receiving services by an individualized skills and socialization provider or an employee, contractor, or volunteer of an individualized skills and socialization provider. This includes failure to:

(A) provide services in accordance with an individual's IPC, IPP, PDP, and implementation plan, resulting in infliction of injury, physical or emotional harm, or pain; and

(B) establish effective health and safety precautions to ensure an individual is protected from infliction of injury, physical or emotional harm, or pain.

(26) [~~(15)~~] Off-site individualized skills and socialization only--An individualized skills and socialization service provider who only delivers off-site individualized skills and socialization services and does not deliver on-site individualized skills and socialization services.

(27) [~~(16)~~] On-site individualized skills and socialization location--The building or a portion of a building that is owned or leased by an individualized skills and socialization provider where on-site individualized skills and socialization service is provided.

(28) [~~(17)~~] Online licensure portal--The Texas Unified Licensure Information Portal (TULIP) system. TULIP is the online system for submitting long-term care licensure applications.

(29) Pattern--Describing repeated, but not widespread in scope, violations of Texas Human Resources Code Chapter 103 or a rule, standard, or order adopted under Texas Human Resources Code Chapter 103 by an individualized skills and socialization provider that:

(A) is found throughout the services provided by the individualized skills and socialization provider; or

(B) affects or involves one or more of the same individuals receiving services, or one or more of the same service providers.

(30) [~~(18)~~] Person-directed plan (PDP)--In the HCS and the TxHmL programs, a written plan, based on person-directed planning and developed with an applicant or individual using the HHSC person-directed plan form and discovery tool found on the HHSC website, that:

(A) describes the supports and services necessary to achieve the desired outcomes identified by the applicant, individual, or LAR and ensures the applicant's or individual's health and safety; and

(B) includes the setting for each service, which is selected by the individual or LAR from setting options.

(31) [~~(19)~~] Program provider--A person, as defined in §52.3 of this title [~~Texas Administrative Code Title 40, §49.102~~] (relating to Definitions), who has a contract with HHSC to provide DBMD, TxHmL, or HCS program services, excluding a financial management services agency.

(32) [~~(20)~~] Service provider--A person, who may be an employee, contractor, or volunteer of an individualized skills and socialization provider, who directly provides individualized skills and socialization services to an individual.

(33) Substantial violation--A violation for which HHSC may assess an administrative penalty before giving an individualized skills and socialization provider an opportunity to correct the violation. A substantial violation is a violation that HHSC determines:

(A) represents a pattern of violation that results in actual harm;

(B) is widespread in scope and results in actual harm;

(C) is widespread in scope, constitutes a potential for actual harm, and relates to:

(i) staffing, including staff training, ratio, and health under §559.227 of this subchapter (relating to Program Requirements);

(ii) administration of medication under §559.227(m) of this subchapter; or

(iii) emergency preparedness and response under §559.229 of this subchapter (relating to Environment and Emergency Response Plan);

(D) constitutes an immediate threat to the health or safety of an individual receiving services;

(E) substantially limits the providers ability to meet identified health and safety needs of an individual;

(F) a violation described by §559.253(a)(2) - (7) of this subchapter (relating to Administrative Penalties);

(G) a violation of Texas Human Resources Code §103.011; or

(H) a second or subsequent violation of Texas Health and Safety Code §326.002, that occurs before the second anniversary of the date of the first violation.

(34) [~~(21)~~] Texas Home Living (TxHmL) program--A waiver program operated by HHSC and approved by CMS in accordance with §1915(c) of the Social Security Act.

(35) Widespread--Describing a violation of Texas Human Resources Code Chapter 103 or a rule, standard, or order adopted under Texas Human Resources Code Chapter 103 by an individualized skills and socialization provider that:

(A) is pervasive throughout the services delivered by the individualized skills and socialization provider; or

(B) represents a systematic failure by the individualized skills and socialization provider that affects or has the potential to affect a large portion of or all individuals receiving services from the individualized skills and socialization provider.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

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Karen Ray
Chief Counsel
Health and Human Services Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 438-3161

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DIVISION 2. LICENSING

26 TAC §559.205, §559.215

STATUTORY AUTHORITY

The amendments are authorized by Texas Government Code §531.0055, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services agencies; §531.021, which provides HHSC with the authority to administer federal funds and plan and direct the Medicaid program in each agency that operates a portion of the Medicaid program; and §531.033, which provides the executive commissioner of HHSC with broad rule-making authority; and Texas Human Resources Code §32.021, which provides that HHSC adopt rules necessary for the proper and efficient operation of the Medicaid program; and §103.004, which requires the executive commissioner of HHSC to adopt rules and set standards implementing Chapter 103.

The amendments implement Texas Government Code §§531.0055, 531.021, and 531.033, and Texas Human Resources Code §§32.021, 103.004, and 103.005.

§559.205. Criteria for Licensing.

(a) An entity may not establish or provide individualized skills and socialization services in Texas without a license issued by the Texas Health and Human Services Commission (HHSC) in accordance with Texas Human Resources Code, Chapter 103, and this subchapter.

(b) An individualized skills and socialization provider must be listed on the HHSC [~~HHSC's~~] Day Activity and Health Services (DAHS) directory as an individualized skills and socialization provider [~~in order~~] to provide individualized skills and socialization services.

(c) An applicant for a license must follow the application instructions and submit a completed application form, required documentation, and [~~submit a complete application form, follow the application instructions, electronically upload required documentation, and submit the~~] required license fee to HHSC through the online licensure portal.

(d) An applicant for a license must complete [~~the~~] HHSC required training to become an individualized skills and socialization provider and provide documentation that required training is complete through the application in the online licensure portal.

(e) An applicant for a license must submit to HHSC as part of the application the:

(1) name of the business entity to be licensed;

(2) tax identification number;

(3) name of the chief executive officer (CEO) or equivalent person;

(4) ownership information;

(5) address of the on-site individualized skills and socialization location or, for providers of off-site individualized skills and socialization services only, the designated place of business where records are kept;

(6) name of program providers using this entity for individualized skills and socialization services, if any;

(7) maximum number of individuals who can receive services [~~individualized skills and socialization~~] at or from this location, which will become the licensed capacity when approved;

(8) effective date the entity will be available to provide individualized skills and socialization services;

(9) attestation that the applicant has created and implemented a community engagement plan, including:

(A) a description of how the organization will meet the requirement to make off-site individualized skills and socialization available to individuals;

(B) a description of how the organization will work with contracted program providers to obtain information from the individuals' person-directed plans (PDP) and implementation plan, and use that information to inform on-site and off-site activities that are aligned with an individual's PDP; and

(C) a description of how staff will respond to an emergency or other unexpected circumstance that may occur during the provision of on-site and off-site individualized skills and socialization services to ensure the health and safety of all individuals; and

(10) any other information required by the online application instructions.

(f) HHSC may deny an application that remains incomplete after 120 days.

(g) Before issuing a license, HHSC considers the background and qualifications of:

(1) the applicant or license holder;

(2) a person with a disclosable interest;

(3) an affiliate of the applicant or license holder;

(4) an administrator;

(5) a manager; and

(6) any other person disclosed on the submitted application as defined by the application instructions.

(h) If the location where an applicant intends to provide on-site or off-site individualized skills and socialization services [~~applicant~~] is located within, on the grounds of, or physically adjacent to a prohibited setting as set forth in the rules governing the Home and Community-based Services (HCBS) waiver programs, as described in §263.2005(d) of this title (relating to Description of On-Site and Off-Site Individualized Skills and Socialization), [~~HCS Program~~] and the applicant has not been approved through heightened scrutiny process as described in §263.2005(e) of this title, HHSC will refer the application for enforcement.

(i) HHSC issues a license if it finds that the applicant or license holder, and all persons described in subsection (g) of this section, affirmatively demonstrate compliance with all applicable requirements of this subchapter, based on an on-site survey. [~~An applicant for a license must affirmatively demonstrate that the applicant meets the requirements for operation based on an on-site survey. However, through the end of HHSC fiscal year 2023, at its sole discretion, HHSC may issue a temporary initial license effective for 180 days which may be extended until such time as an applicant demonstrates that it meets the requirements for operation based on this on-site survey.~~]

(j) For DAHS Individualized Skills and Socialization Only licensure applications, HHSC may:

(1) at its sole discretion, issue a temporary initial license effective for 180 days, which may be extended until such time as an applicant demonstrates that it meets the requirements for operation based on an on-site survey; and

(2) issue a three-year license to applicants described under this subsection.

[~~(j) [HHSC issues a license if it finds that the applicant or license holder, all persons described in subsection (h) of this section, and the provider meet all applicable requirements of this subchapter, and the on-site individualized skills and socialization location, if applicable, meets all requirements of this subchapter.]~~

(k) For DAHS with Individualized Skills and Socialization licensure applications, HHSC will follow the criteria for licensure as described in §559.11 of this chapter (related to Criteria for Licensing).

[~~(k) HHSC will implement a system under which licenses issued under this subchapter expire on staggered dates. Through the end of HHSC fiscal year 2023, applicants may receive:~~]

[~~(1) a one-year license;~~]

[~~(2) a two-year license;~~]

[~~(3) a three-year license.~~]

(l) An individualized skills and socialization provider must not provide services to more individuals than the number of individuals specified on its license.

(m) An individualized skills and socialization provider must prominently and conspicuously post its license for display in a public area of the on-site individualized skills and socialization location that is readily accessible to individuals, employees, and visitors. For an off-site only individualized skills and socialization provider, the license must be displayed in a conspicuous place in the designated place of business.

(n) If any information submitted through the application process changes following licensure, the license holder must submit an application through the online licensure portal to make the changes.

§559.215. Criteria for Denying a License or Renewal of a License.

(a) The Texas Health and Human Services Commission (HHSC) may deny an initial license or renewal of a license if any person described in §559.205(g) of this division [~~§559.205(h) of this subchapter~~] (relating to Criteria for Licensing):

(1) is subject to denial or refusal as described in Chapter 560 of this title (relating to Denial or Refusal of License) during the time frames described in that chapter;

(2) substantially fails to comply with the requirements described in §559.225 of this subchapter (relating to General Requirements) and §559.227 of this subchapter (relating to Program Requirements), including:

(A) noncompliance that poses a serious threat to health and safety; or

(B) a failure to maintain compliance on a continuous basis;

(3) aids, abets, or permits a substantial violation described in paragraph (2) of this subsection about which the person had or should have had knowledge;

(4) fails to provide the required information, facts, or references;

(5) knowingly provides the following false or fraudulent information:

(A) submits false or intentionally misleading statements to HHSC;

(B) uses subterfuge or other evasive means of filing;

(C) engages in subterfuge or other evasive means of filing on behalf of another who is unqualified for licensure;

(D) knowingly conceals a material fact; or

(E) is responsible for fraud;

(6) fails to pay the following fees, taxes, and assessments when due:

(A) licensing fees as described in §559.219 of this division [~~subchapter~~] (relating to License Fees); and

(B) franchise taxes, if applicable; or

(7) has a history of any of the following actions during the five-year period preceding the date of the application:

(A) operation of a facility that has been decertified or had its contract canceled under the Medicare or Medicaid program in any state;

(B) federal or state Medicare or Medicaid sanctions or penalties;

(C) unsatisfied final judgments;

(D) eviction involving any property or space used as a facility in any state; or

(E) suspension of a license to operate a health facility, long-term care facility, or a similar facility in any state.

(b) Concerning subsection (a)(7) of this section, HHSC may consider exculpatory information provided by any person described in §559.205(g) of this division [~~§559.205(h) of this subchapter~~] and grant a license if HHSC finds that person able to comply with the rules in this chapter.

(c) HHSC does not issue a license to an applicant if the applicant has a history of any of the following actions during the five-year period preceding the date of the application:

(1) revocation of a license to operate a health care facility, long-term care facility, or similar facility in any state;

(2) debarment or exclusion from the Medicare or Medicaid programs by the federal government or a state; or

(3) a court order [~~injunction~~] prohibiting any person described in §559.205(g) of this division [~~§559.205(h) of this subchapter~~] from operating a facility.

(d) HHSC considers only [~~Only~~] final actions ~~are considered~~ for purposes of subsections (a)(7) and (c) of this section. An action is final when routine administrative and judicial remedies are exhausted. However, a provider must disclose all [~~All~~] actions to HHSC, whether pending or final[~~, must be disclosed~~].

(e) If an applicant owns multiple facilities, HHSC examines the overall record of compliance for [~~in~~] all facilities [~~will be examined~~]. An overall record poor enough to deny issuance of a new license will not preclude the renewal of licenses of individual facilities with satisfactory records.

(f) If HHSC denies a license or refuses to issue a renewal of a license, the applicant or license holder may request a hearing by following HHSC [~~HHSC's~~] rules in Texas Administrative Code (TAC), Title 1, [~~TAC~~] Chapter 357, Subchapter I (relating to Hearings Under the Administrative Procedure Act). An administrative hearing is conducted in accordance with Texas Government Code, Chapter 2001, and 1 TAC Chapter 357, Subchapter I.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

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Karen Ray
Chief Counsel
Health and Human Services Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 438-3161

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DIVISION 3. PROVIDER REQUIREMENTS

26 TAC §§559.225 - 559.228

STATUTORY AUTHORITY

The amendments and new sections are authorized by Texas Government Code §531.0055, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services agencies; §531.021, which provides HHSC with the authority to administer federal funds and plan and direct the Medicaid program in each agency that operates a portion of the Medicaid program; and §531.033, which provides the executive commissioner of HHSC with broad rule-making authority; and Texas Human Resources Code §32.021, which provides that HHSC adopt rules necessary for the proper and efficient operation of the Medicaid program; and §103.004, which requires the executive commissioner of HHSC to adopt rules and set standards implementing Chapter 103.

The amendments and new sections implement Texas Government Code §§531.0055, 531.021, and 531.033, and Texas Human Resources Code §§32.021, 103.004, and 103.005.

§559.225. General Requirements.

(a) An individualized skills and socialization provider must:

(1) comply with the provisions of Texas Health and Safety Code (HSC), Chapter 250 (relating to Nurse Aide Registry and Criminal History Checks of Employees and Applicants for Employment in Certain Facilities Serving the Elderly, Persons with Disabilities, or Persons with Terminal Illnesses);

(2) before offering employment to any person, search the following registries to determine if the person is eligible for employment:

(A) the employee misconduct registry (EMR) established under HSC §253.007;

(B) the Texas Health and Human Services Commission (HHSC) nurse aide registry (NAR) and medication aide registry (MAR);

(C) the List of Excluded Individuals and Entities (USLEIE) maintained by the United States Department of Health and Human Services; and

(D) the List of Excluded Individuals and Entities (LEIE) maintained by HHSC Office of Inspector General;

(3) not employ a person who is listed on the:

(A) HHSC employee misconduct registry as unemployable; or

(B) HHSC nurse or medication aide registries as revoked or suspended; and

(4) provide information about the EMR to an employee in accordance with [~~26 TAC~~] §561.3 of this title (relating to Employment and Registry Information).

(b) In addition to the initial search of the EMR, LEIE, NAR, MAR, and USLEIE, an individualized skills and socialization provider must:

(1) conduct a search of the NAR, MAR, and EMR to determine if the employee is designated in those registries as unemployable at least every 12 months; [~~and~~]

(2) keep a copy of the results of the initial and annual searches of the NAR, MAR, and EMR in the employee's personnel file and make it available to HHSC upon request; and

(3) comply with all relevant federal and state standards. [~~; and~~]

[~~(4) comply with all applicable provisions of the Texas Human Resource Code (HRC), Chapter 102 (relating to Rights of the Elderly).~~]

[~~(c) An individualized skills and socialization provider must:~~]

[~~(1) provide an individual who is 55 years of age or older with a written list of the individual's rights, as outlined under HRC §102.004; and~~]

[~~(2) create policies and procedures that protect and promote the rights of the individual, including the individual's right to:~~]

[~~(A) control his or her schedule and activities related to on-site individualized skills and socialization;~~]

[~~(B) access his or her food at any time;~~]

[~~(C) receive visitors without prior notice to the individualized skills and socialization provider unless such rights are contraindicated by the individual's rights or the rights of other individuals; and~~]

[~~(D) physically access the building.~~]

(c) [~~(d)~~] An individualized skills and socialization provider must:

(1) report abuse, neglect, and exploitation [~~, and critical incidents~~] in accordance with §559.241 of this subchapter (relating to Reporting Abuse, Neglect, or Exploitation to HHSC [~~, or Critical Incidents~~]);

(2) suspend a service provider who HHSC finds has engaged in reportable conduct while the service provider exhausts any applicable appeals process, including informal and formal appeals and any hearing or judicial review, pending a final decision by an administrative law judge, and may not reinstate the service provider during any applicable appeals process;

(3) [~~(2)~~] develop and enforce [~~create~~] policies and procedures for creating and maintaining incident reports; and

(4) [~~(3)~~] ensure the confidentiality of individual records and other information related to individuals.[~~; and~~]

[~~(4) inform the individual orally and in writing of the individual's rights, responsibilities, and grievance procedures in a language the individual understands.~~]

(d) [~~(e)~~] An individualized skills and socialization provider must prominently and conspicuously post for display in a public area of the on-site individualized skills and socialization location, or designated place of business for off-site only individualized skills and socialization, that is readily available to individuals, employees, and visitors:

(1) the license issued under this chapter;

(2) a sign prescribed by HHSC that describes complaint procedures and specifies how complaints may be filed with HHSC;

(3) a notice in the form prescribed by HHSC stating that survey and related reports are available at the on-site individualized skills and socialization location for public survey and providing the HHSC [~~HHSC's~~] toll-free telephone number that may be used to obtain information concerning the individualized skills and socialization provider;

(4) a copy of the most recent survey report relating to the individualized skills and socialization provider;

(5) a brochure, letter, or website that outlines the individualized skills and socialization provider's hours of operation, holidays, and a description of activities offered; and

(6) emergency telephone numbers, including the abuse hotline telephone number.

(e) In addition to the list of individuals served as described in §559.231(f)(3) of this subchapter (relating to Surveys and Visits), an individualized skills and socialization provider must also maintain an individual information document that includes:

(1) which individualized skills and socialization services are being delivered by the individualized skills and socialization provider;

(2) the individual's name, identification, or clinical record number; and

(3) the date the individual began receiving individualized skills and socialization services.

§559.226. Environmental Safety Requirements.

(a) An individualized skills and socialization provider must ensure the facility interior of the on-site location:

(1) has furnishings that are appropriately maintained and safe for use;

(2) is clean, sanitary, and free of odors that are considered disruptive, unpleasant, or potentially offensive;

(3) is free of infestation by bugs, rodents, and other pests;

(4) has walls, ceilings, floors, and windows that are structurally sound;

(5) is free of environmental contaminants, physical hazards, and accumulated waste or trash;

(6) has bathrooms that are accessible, functional, and safe for use;

(7) has hot water available for use by individuals receiving services that:

(A) is located at sinks in the facility that may be used by individuals receiving services; and

(B) does not exceed 120 degrees Fahrenheit;

(8) includes any major appliances necessary for maintaining the health and safety of individuals that are appropriately maintained and in working order;

(9) has a secure storage area for cleaning chemicals and supplies that is located separately from any storage area for food items;

(10) has cleaning chemicals:

(A) stored in their original containers; and

(B) used in accordance with directions and warnings on the product label;

(11) has a location where perishable food is either refrigerated or otherwise stored safely; and

(12) has working smoke alarms in all main areas that:

(A) are maintained in accordance with the manufacturer's instructions;

(B) emit a distinguishable audible response that can be heard throughout the facility including classrooms, common areas, and hallways; and

(C) are used solely for the purpose of alerting individuals and service providers of a fire.

(b) An individualized skills and socialization provider must ensure the facility interior of the on-site location is serviced by a functioning heating and cooling system. The provider must:

(1) ensure the availability of an alternate method of supplying heat and cooling that meets state, local, and federal guidelines in the event the system does not work or is in repair;

(2) ensure that heating and cooling temperature settings are appropriate for maintaining a safe environment for individuals; and

(3) consider the specific health and safety needs of individuals when determining the appropriate heating and cooling temperature settings.

(c) An individualized skills and socialization provider must ensure the facility exterior of the on-site location:

(1) is free of hazards and the accumulation of waste and trash;

(2) is accessible to individuals receiving services;

(3) does not compromise the health or safety of individuals; and

(4) if applicable, has exterior furnishings that are maintained appropriately and safe for use.

§559.227. Program Requirements.

(a) Staff qualifications.

(1) An individualized skills and socialization provider must:

(A) employ an administrator;

(B) ensure the administrator meets the requirements outlined in paragraph (2) of this subsection; and

(C) have a policy regarding the delegation of responsibility in the administrator's absence.

(2) A service provider of individualized skills and socialization must be at least 18 years of age and:

(A) have a high school diploma or a certificate recognized by a state as the equivalent of a high school diploma; or

(B) have documentation of a proficiency evaluation of experience and competence to perform the job tasks that includes:

(i) a written competency-based assessment of the ability to document service delivery and observations of the individuals receiving services; and

(ii) at least three written personal references from persons not related by blood that indicate the ability to provide a safe, healthy environment for the individuals receiving services.

(3) A service provider of individualized skills and socialization who provides transportation must:

(A) have a valid driver's license; and

(B) transport individuals in a vehicle that:

(i) is insured in accordance with state law; and

(ii) meets all state registration and safety requirements.

(b) Staffing. An individualized skills and socialization provider must ensure that:

(1) an individual whose needs cannot be met by the individualized skills and socialization provider is not admitted or retained;

(2) the ratio of service providers to individuals is maintained in accordance with §260.507 of this title (relating to Staffing Ratios), §262.917 of this title (relating to Staffing Ratios for Off-Site Individualized Skills and Socialization), and §263.2017 of this title (relating to Staffing Ratios for Off-Site Individualized Skills and Socialization), during the provision of off-site individualized skills and socialization, including during transportation; and

(3) sufficient staff are on duty at all times during the provision of on-site individualized skills and socialization to ensure:

(A) the health and safety of the individuals;

(B) supervision is provided in accordance with the needs of an individual; and

(C) individualized skills and socialization services or similar services are provided in accordance with an individual's individual plan of care (IPC), individual program plan (IPP), person-directed plan (PDP), and implementation plan, as applicable.

(c) Staff responsibilities.

(1) The administrator:

(A) manages the individualized skills and socialization services and the on-site individualized skills and socialization location;

(B) ensures staff are trained;

(C) supervises staff; and

(D) maintains all records.

(2) A service provider:

(A) delivers individualized skills and socialization services;

(B) assists with recreational activities; [~~and~~]

(C) provides protective supervision through observation and monitoring; and

(D) is trained on the needs of the individual.

(d) An individualized skills and socialization provider must make both on-site and off-site individualized skills and socialization services available to an individual who receives Home and Community-based Services (HCS), Texas Home Living (TxHmL), or Deaf Blind with Multiple Disabilities (DBMD) services, unless the individu-

alized skills and socialization provider provides off-site individualized skills and socialization services only.

(e) An individualized skills and socialization provider must ensure that on-site individualized skills and socialization services:

(1) are [~~is~~] provided in a building or a portion of a building that is owned or leased by an individualized skills and socialization provider; ~~and~~

(2) promote an individual's development of skills and behavior that support the individual's independence and personal choice;

(3) [~~(2)~~] are [~~is~~] not provided in:

(A) a prohibited setting for an individual, as set forth in the rules governing Home and Community-based Services (HCBS) waiver programs; or

(B) the residence of an individual or another person [~~the HCS Program~~].

(f) An individualized skills and socialization provider must ensure that off-site individualized skills and socialization services:

(1) include activities that:

(A) integrate the individual into the community; and

(B) promote the individual's development of skills and behavior that support the individual's independence and personal choice;

(2) [~~(1)~~] are provided in a community setting chosen by the individual from among available community setting options;

(3) [~~(2)~~] include [~~includes~~] transportation necessary for the individual's participation in off-site individualized skills and socialization; and

(4) [~~(3)~~] are [~~is~~] not provided in:

(A) a building in which on-site individualized skills and socialization are provided;

(B) a prohibited setting for an individual, as set forth in the rules governing Home and Community-based Services (HCBS) waiver programs [~~the HCS Program~~], unless:

(i) provided in an event open to the public; or

(ii) the activity is a volunteer activity performed by an individual in such a setting; or

(C) the residence of an individual or another person, unless the activity is a volunteer activity performed by an individual in the residence.

(g) An individualized skills and socialization provider must:

(1) provide services [~~individualized skills and socialization~~]:

(A) that promote autonomy and positive social interaction;

(B) in accordance with:

(i) the individuals IPC, IPP, PDP, or implementation plan as applicable; and

(ii) the individuals identified health and safety needs, physicians' orders, and goals, as documented and agreed upon by the individual or the individual's legally authorized representative (LAR); and

(2) develop and implement written policies and procedures for consistent and effective monitoring and documentation of an individual's progress towards person-centered objectives related to skill development and socialization, in accordance with the individuals IPC, IPP, PDP, or implementation plan as applicable.

[~~(1) in the Deaf Blind with Multiple Disabilities (DBMD) program, in accordance with an individual's individual plan of care (IPC) and individual program plan (IPP); and~~]

[~~(2) in the Texas Home Living (TxHmL) program and Home and Community-based Services (HCS) program, in accordance with an individual's person-directed plan (PDP), IPC, and implementation plan.~~]

(h) An individualized skills and socialization provider must not require an individual to take a skills test or meet other requirements to receive off-site individualized skills and socialization services.

(i) If an individual does not want to participate in a scheduled on-site or off-site individualized skills and socialization activity, or the individual's LAR does not want the individual to participate in a scheduled on-site or off-site individualized skills and socialization [~~an~~] activity, [~~the individual scheduled for on-site individualized skills and socialization or off-site individualized skills and socialization, or the legally authorized representative (LAR) does not want the individual to participate in such activity,~~] the individualized skills and socialization provider must document the decision not to participate in the individual's record.

(j) If an individualized skills and socialization provider becomes aware that a modification or restriction to the services provided is needed based on a specific assessed need of an individual, the individualized skills and socialization provider must:

(1) inform the individual's program provider of the needed modification or restriction;

(2) obtain updated documentation from the program provider outlining the modification or restriction on the individual's person-centered service plan, which includes:

(A) for HCS and TxHmL, the individual's PDP; or

(B) for DBMD, the individual's IPP;

(3) ensure the updated person-centered service plan is received from the program provider and maintained in the individual's record, and that any updates are included on the individual information document as described in §559.225(f) of this division (relating to General Requirements) prior to the implementation of the modification or restriction;

(4) inform service providers of updates to an individual's person-centered service plan; and

(5) ensure the implementation of modifications or restrictions is in accordance with the individual's updated person-centered service plan.

(k) [~~(j)~~] An individualized skills and socialization provider must provide on-site and off-site individualized skills and socialization services in-person.

(l) [~~(k)~~] Training.

(1) Initial training.

(A) An individualized skills and socialization provider must:

(i) provide service providers with training on fire, disaster, and their responsibilities under the emergency response plan

developed in accordance with §559.229 of this division [~~subchapter~~] (relating to Environment and Emergency Response Plan) within three workdays after the start of employment and document the training in the individualized skills and socialization provider's records; and

(ii) provide service providers with a minimum of eight hours of training during the first three months after the start of employment and document the training in the records of the individualized skills and socialization provider.

(B) The training provided in accordance with subparagraph (A)(ii) of this paragraph must include:

(i) any nationally or locally recognized adult CPR course or certification;

(ii) first aid;

(iii) infection control;

(iv) overview of the population served by the individualized skills and socialization provider; and

(v) identification and reporting of abuse, neglect, or exploitation.

(2) Ongoing training.

[~~(A)~~] In addition to initial training requirements described in subsection (l)(1)(A) of this section, at least annually, an [~~An~~] individualized skills and socialization provider must:

(A) [~~(i)~~] ensure that service providers maintain current certification in CPR;

(B) [~~(ii)~~] retrain service providers [~~train~~] on their responsibilities under the emergency response plan developed in accordance with §559.229 of this division and when the service provider's responsibilities under the plan change;

(C) [~~(iii)~~] conduct training for service providers [~~train~~] on infection control policies and procedures developed in accordance with subsection (o) [~~(n)~~] of this section; and

(D) [~~(iv)~~] conduct training for service providers [~~train~~] on the identification and reporting of abuse, neglect, or exploitation.

(m) [~~(l)~~] Medications.

(1) Administration.

(A) If individuals [~~an individual~~] cannot or choose [~~chooses~~] not to self-administer ~~his or her~~ medications, an individualized skills and socialization provider must provide assistance with such medications and the performance of related tasks if:

(i) a registered nurse has assessed the need for assistance and related tasks and delegated such to the individualized skills and socialization provider in accordance with state law and rules; or

(ii) a physician has delegated the assistance and related tasks as a medical act to the individualized skills and socialization provider under Texas Occupations Code Chapter 157, as documented by the physician.

(B) An individualized skills and socialization provider must record an individual's medications, including over-the-counter medications, on the individual's medication profile record and ensure that medication labels are:[.]

(i) original and current;

(ii) easily readable;

(iii) affixed to the corresponding prescription bottle, container, or packaging; and

(iv) include the appropriate accessory and cautionary instructions and prescription expiration date when applicable.

(C) An individualized skills and socialization provider must ensure that information on the medication profile record:

(i) reflects current prescription orders as verified by the pharmacy or ordering healthcare provider; and

(ii) includes [~~The recorded information must be obtained from the prescription label and must include~~] the medication name, strength, dosage, doses received, directions for use, route of administration, prescription number, pharmacy name, and the date each medication was issued by the pharmacy.

(2) General.

(A) An individualized skills and socialization provider must immediately report to an individual's program provider any unusual reactions to a medication or treatment.

(B) When an individualized skills and socialization provider supervises or administers medications, the individualized skills and socialization provider must:

(i) maintain accurate, current, and accessible documentation of medication administration for each individual; and

(ii) document the date and time each medication was taken in accordance with recorded information on the individual's medication profile record.

(C) In the event of a medication error, or if an individual does not receive or take the medication or treatment as prescribed, the individualized skills and socialization provider must:

(i) document the date and time the medication dose should have been administered or provided to the individual; and

(ii) the name and strength of any medication missed [~~document in writing if an individual does not receive or take the medication and treatment as prescribed. The documentation must include the date and time the dose should have been taken, and the name and strength of medication missed~~].

(3) Storage.

(A) An individualized skills and socialization provider must provide a locked area for all medications, which may include:

(i) a central storage area; or

(ii) a medication cart that, when not in use, is secured in the area designated for its storage.

(B) An individualized skills and socialization provider must store an individual's medication separately from other individuals' medications within the storage area.

(C) An individualized skills and socialization provider must store medication requiring refrigeration in a locked refrigerator ~~that is~~ used only for medication storage or in a separate, permanently attached, locked medication storage box in a refrigerator.

(D) An individualized skills and socialization provider must store poisonous substances and medications labeled for "external use only" separately within the locked area.

(E) An individualized skills and socialization provider must store drugs covered by Schedule II of the Controlled Substances

Act of 1970 in a locked, permanently attached cabinet, box, or drawer that is separate from the locked storage area for other medications.

(F) An individualized skills and socialization provider must store medications in accordance with manufacturer's instructions, under sanitary conditions, and with consideration of requirements pertaining to temperature, light, moisture, ventilation, segregation, and security.

(n) [~~(m)~~] Accident, injury, or acute illness.

(1) An individualized skills and socialization provider must stock and maintain in a single location in the on-site individualized skills and socialization location first aid supplies to treat burns, cuts, and poisoning.

(2) An individualized skills and socialization provider delivering off-site individualized skills and socialization must ensure first aid supplies to treat burns, cuts, and poisoning are immediately available at all times during service provision.

(3) In the event of accident or injury to an individual requiring emergency care, or in the event of death of an individual, an individualized skills and socialization provider must:

(A) arrange for emergency care or transfer to an appropriate place for treatment, including:

(i) a physician's office;

(ii) a clinic; or

(iii) a hospital;

(B) immediately notify an individual's program provider with which the individualized skills and socialization provider contracts to provide services to the individual; and

(C) describe and document the accident, injury, or illness on a separate report containing a statement of final disposition and maintain the report on file.

(o) [~~(n)~~] An individualized skills and socialization provider must develop [~~create~~] and enforce written policies and procedures for infection control, including spread of disease to ensure staff compliance with state law, the Occupational Safety and Health Administration, and the Centers for Disease Control and Prevention.

§559.228. Rights of Individuals.

(a) An individualized skills and socialization provider must:

(1) provide each individual referenced in Texas Human Resources Code (HRC) §103.011 and the individual's legally authorized representative (LAR), as appropriate, with a written list of the individual's rights, as outlined under HRC §102.004 (relating to List of Rights); and

(2) comply with all applicable provisions of HRC Chapter 102 (relating to Rights of the Elderly).

(b) An individualized skills and socialization provider must ensure that individuals are informed of their rights and responsibilities and of grievance procedures in a language they comprehend:

(1) through the individual's preferred mode of communication; and

(2) in a manner accessible to the individual.

(c) An individualized skills and socialization provider must develop and implement written policies and procedures that protect and promote the rights of all individuals receiving services and ensure individuals can exercise their rights without interference, coercion, discrimination, or retaliation from the provider.

(d) An individualized skills and socialization provider must ensure that any deviation from the requirements of this section is based on an assessed need and documented in accordance with the requirements outlined in §559.227(j) of this division (relating to Program Requirements) prior to implementation. This includes an individual's right to:

(1) control and support personal schedules and activities;

(2) access personal food items at any time;

(3) receive visitors of the individual's choosing at any time; and

(4) physically access the building.

(e) An individualized skills and socialization provider must develop and implement policies and procedures for ensuring individuals:

(1) receive support and assistance from the individualized skills and socialization provider in addressing concerns with the program provider regarding the individual plan of care (IPC), individual program plan (IPP), person-directed plan (PDP), or implementation plan when the individual dislikes or disagrees with the services being rendered;

(2) live free from abuse, neglect, or exploitation;

(3) receive services in a safe and clean environment;

(4) receive services in accordance with the individuals IPC, IPP, PDP, and implementation plan, as applicable, through service providers who are responsive to the needs of the individual;

(5) have privacy during treatment and care of personal needs; and

(6) participate in social, recreational, and group activities.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

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Karen Ray
Chief Counsel
Health and Human Services Commission
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For further information, please call: (512) 438-3161

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DIVISION 4. SURVEYS, INVESTIGATIONS, AND ENFORCEMENT

26 TAC §559.239

STATUTORY AUTHORITY

The repeal is authorized by Texas Government Code §531.0055, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services agencies; §531.021, which provides HHSC with the authority to administer federal funds and plan and direct the Medicaid program in each agency that operates a portion of the Medicaid program; and §531.033, which provides the executive commissioner of HHSC with broad rule-making authority; and Texas Human Resources Code §32.021, which provides that HHSC adopt rules necessary for the proper and ef-

ficient operation of the Medicaid program; and §103.004, which requires the executive commissioner of HHSC to adopt rules and set standards implementing Chapter 103.

The repeal implements Texas Government Code §§531.0055, 531.021, and 531.033, and Texas Human Resources Code §§32.021, 103.004, and 103.005.

§559.239. Definitions of Abuse, Neglect, and Exploitation.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Karen Ray
Chief Counsel
Health and Human Services Commission
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26 TAC §§559.241, 559.243, 559.253, 559.255, 559.257

STATUTORY AUTHORITY

The amendments and new sections are authorized by Texas Government Code §531.0055, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services agencies; §531.021, which provides HHSC with the authority to administer federal funds and plan and direct the Medicaid program in each agency that operates a portion of the Medicaid program; and §531.033, which provides the executive commissioner of HHSC with broad rule-making authority; and Texas Human Resources Code §32.021, which provides that HHSC adopt rules necessary for the proper and efficient operation of the Medicaid program; and §103.004, which requires the executive commissioner of HHSC to adopt rules and set standards implementing Chapter 103.

The amendments and new sections implement Texas Government Code §§531.0055, 531.021, and 531.033, and Texas Human Resources Code §§32.021, 103.004, and 103.005.

§559.241. Reporting Abuse, Neglect, or Exploitation[~~, or Incidents~~] to HHSC.

(a) Any individualized skills and socialization provider [~~staff~~] who has ~~reasonable~~ cause to believe that an individual is being or has been subjected to [~~is in a state of~~] abuse, neglect, or exploitation must report the abuse, neglect, or exploitation to the Texas Health and Human Services (HHSC) Complaint and Incident Intake Section through the online licensure portal or by telephone to 1-800-458-9858 within one hour after suspecting or learning of the alleged abuse, neglect, or exploitation.

(b) In addition to the reporting requirements described in subsection (a) of this section, an individualized skills and socialization provider must report the death of an individual when the death occurs while the individual is receiving services from an individualized skills and socialization provider to the HHSC Complaint and Incident Intake Section within one hour after learning of the [~~individual's~~] death.

(c) The following information must be reported to HHSC when making a report described in subsections (a) or (b) of this section:

(1) name, age, and address of the individual;

(2) name and address of the person responsible for the care of the individual, if available;

(3) nature and extent of the individual's condition;

(4) basis of the reporter's knowledge; and

(5) any other relevant information.

(d) Within five working days after making a report described in subsections (a) or (b) of this section, the individualized skills and socialization provider must conduct [~~ensure~~] an investigation of the incident [~~is conducted~~] and send a written investigation report on Form 3613-A, Provider Investigation Report, [~~or a form containing, at a minimum, the information required by Form 3613-A,~~] to HHSC [~~HHSC's~~] Complaint and Incident Intake.

(e) An individualized skills and socialization provider may not retaliate against an individual, legally authorized representative, or service provider for filing a complaint or presenting a grievance or for providing, in good faith, information to HHSC relating to abuse, neglect, or exploitation.

§559.243. HHSC Complaint Investigation.

[~~(a) A complaint is any allegation received by the Texas Health and Human Services Commission (HHSC) regarding abuse, neglect, or exploitation of an individual or a violation of state standards.~~]

(a) [~~(b)~~] HHSC must give the individualized skills and socialization provider notification of the complaint received and a summary of the complaint, without identifying the source of the complaint.

(b) [~~(c)~~] HHSC investigates complaints of abuse, neglect, or exploitation when the alleged victim is an individual receiving services from an individualized skills and socialization provider and:

(1) the act occurs at the on-site individualized skills and socialization location;

(2) the act occurs during the provision of off-site individualized skills and socialization services;

(3) the individualized skills and socialization provider is responsible for the supervision of the individual at the time the act occurs; or

(4) the alleged perpetrator is affiliated with the individualized skills and socialization provider.

[~~(d) Complaints of abuse, neglect, or exploitation not meeting the criteria in subsection (a) of this section must be referred to the Texas Department of Family and Protective Services.~~]

(c) [~~(e)~~] Complaint investigations must include a visit to the individualized skills and socialization provider and consultation with persons thought to have knowledge of the circumstances. If the individualized skills and socialization provider fails to admit HHSC staff for a complaint investigation, HHSC will seek a district [~~probate or county~~] court order for admission. Investigators may request from [~~of~~] the court that a peace officer accompany them.

[~~(f) In cases concluded to be physical abuse, the written report of the investigation by HHSC must be submitted to the appropriate law enforcement agency.~~]

[~~(g) In cases concluded to be abuse, neglect, or exploitation of an individual with a guardian, the written report of the investigation by HHSC must be submitted to the probate or county court that oversees the guardianship.~~]

§559.253. Administrative Penalties.

(a) The Texas Health and Human Services Commission (HHSC) may impose an administrative penalty if an individualized skills and socialization provider:

(1) fails to comply with Texas Human Resources Code (HRC) Chapter 103 or a rule, standard, or order adopted under HRC Chapter 103;

(2) makes a false statement of a material fact that the provider knows or should know is false:

(A) on an application for a license or a renewal of a license or in an attachment to the application; or

(B) with respect to a matter under investigation by HHSC;

(3) refuses to allow an HHSC representative to inspect:

(A) a book, record, or file required to be maintained by the provider; or

(B) any portion of the premises of the on-site location, or for off-site only providers, the designated place of business where records are kept;

(4) willfully interferes with the work of an HHSC representative who is preserving evidence of a violation of:

(A) HRC Chapter 103;

(B) a rule, standard, or order adopted under HRC Chapter 103; or

(C) a term of a license issued under this chapter;

(5) willfully interferes with the work of an HHSC representative or the enforcement of this chapter;

(6) fails to pay a penalty assessed under HRC Chapter 103, or a rule adopted under this chapter within 30 calendar days after the date the assessment of the penalty becomes final;

(7) fails to notify HHSC of a change of ownership in accordance with §559.211 of this subchapter (relating to Change of Ownership and Notice of Changes); or

(8) fails to submit an approved plan of correction to HHSC within 10 calendar days after receiving the final notification of assessed penalties.

(b) The range of the administrative penalty that may be imposed against the individualized skills and socialization provider each day for a violation described in subsection (a)(1) of this section is based on the scope and severity of the violation and whether it is an initial or repeated violation, as set forth in the following figure.
Figure: 26 TAC §559.253(b)

(c) HHSC imposes administrative penalties in accordance with the schedule of appropriate and graduated penalties established in this section. When determining the amount of an administrative penalty, HHSC considers:

(1) the seriousness of the violation, including the nature, circumstances, extent, and gravity of the situation, and the hazard or potential hazard created by the situation to the health or safety of the public;

(2) the history of previous violations by a facility;

(3) the amount necessary to deter future violations;

(4) the facility's efforts to correct the violation; and

(5) any other matter that justice may require.

(d) If HHSC determines a violation is non-substantial, HHSC allows the individualized skills and socialization provider one opportunity to correct the violation to avoid an administrative penalty.

(e) If HHSC determines a violation is substantial as defined in §559.203 of this subchapter (relating to Definitions), HHSC does not allow the individualized skills and socialization provider an opportunity to correct the violation before HHSC imposes an administrative penalty.

(f) If HHSC imposes an administrative penalty for a violation as described in subsection (a) of this section, the administrative penalty begins accruing:

(1) for a substantial violation, on the date HHSC identifies the violation; or

(2) for a violation that is non-substantial, on the date of the exit conference of the post 45-day follow-up survey.

(g) An administrative penalty accrues each day until the individualized skills and socialization provider completes corrective action for that violation, as determined by HHSC.

(h) If an individualized skills and socialization provider demonstrates the corrective action is complete on the same day an administrative penalty begins accruing, HHSC imposes an administrative penalty for one day.

(i) For an administrative penalty imposed in accordance with subsection (a)(2) of this section:

(1) HHSC imposes the penalty no more than once per survey;

(2) HHSC does not allow the individualized skills and socialization provider an opportunity to correct the action before imposing the penalty; and

(3) the amount of the penalty is $500.

(j) If HHSC imposes an administrative penalty against the individualized skills and socialization provider in accordance with subsection (a)(2)- (8) of this section, HHSC does not, at the same time, impose a closing order or licensure suspension from the program provider for the same violation, action, or failure to act.

§559.255. Individualized Skills and Socialization Provider Compliance and Corrective Action.

(a) The Texas Health and Human Services Commission (HHSC) may conduct an unannounced survey or investigation in accordance with §559.231 of this division (relating to Surveys and Visits) to assess the health and safety of individuals receiving services from an individualized skills and socialization provider and make a determination regarding the provider's compliance with licensing and program requirements under this subchapter.

(b) During a survey or investigation, if HHSC determines there is an immediate threat to the health and safety of individuals due to an individualized skills and socialization provider's non-compliance with one or more regulatory requirements identified under this subchapter, HHSC notifies the individualized skills and socialization provider orally and in writing of the determination. In accordance with HHSC instructions and the requirements of this subchapter, the individualized skills and socialization provider must develop and document a plan of removal and submit the written plan to HHSC. The plan must include:

(1) a separate plan of removal for each identified area of non-compliance;

(2) a description of:

(A) immediate actions the individualized skills and socialization provider will take to ensure there is no longer a threat of harm to individuals receiving services;

(B) how the provider will identify all affected individuals;

(C) how the provider will monitor and document progress on:

(i) each action identified on the plan of removal; and

(ii) the effectiveness of the plan;

(D) actions the provider will take to ensure each identified non-compliance will not reoccur; and

(E) specific dates and times by which the individualized skills and socialization provider will complete each corrective action identified in this paragraph.

(c) HHSC notifies an individualized skills and socialization provider if a plan of removal is approved or not approved, and HHSC conducts daily visits and monitoring of the provider until HHSC determines threat of immediate harm no longer exists.

(d) If HHSC does not approve an individualized skills and socialization provider's plan of removal, the provider must resubmit a revised plan of removal to HHSC.

(e) If an individualized skills and socialization provider fails to submit a plan of removal as required, or does not implement an approved plan of removal, HHSC may deny or revoke the individualized skills and socialization provider's license.

(f) If HHSC determines the individualized skills and socialization provider complies with the regulatory requirements as indicated under this subchapter, HHSC:

(1) sends the individualized skills and socialization provider a final survey report stating that the individualized skills and socialization provider complies with the regulatory requirements;

(2) does not require any action by the individualized skills and socialization provider; and

(3) issues a license to the individualized skills and socialization provider as described in §559.205 of this subchapter (relating to Criteria for Licensing) if the survey is an initial or a re-licensing survey.

(g) If HHSC determines from an initial licensure survey, re-licensure survey, intermittent survey, or investigation that the individualized skills and socialization provider is not in compliance with a regulatory requirement:

(1) HHSC provides a final statement of violations in accordance with §559.233 of this division (relating to Determinations and Actions Pursuant to Surveys).

(2) HHSC may recommend with the final statement of violations the assessment of an administrative penalty for each violation and the amount of the administrative penalty, in which case HHSC provides:

(A) written notice to the individualized skills and socialization provider, indicating the amount of the recommended administrative penalty; and

(B) a statement of whether the violation is subject to correction in accordance with subsection (b) of this section and, if the violation is subject to correction:

(i) a statement of the date on which the individualized skills and socialization provider must file with HHSC a plan of correction for approval by HHSC;

(ii) the date on which the individualized skills and socialization provider must complete the plan of correction to avoid assessment of the administrative penalty; and

(iii) a statement that the license holder has a right to an administrative hearing on the occurrence of the violation, the amount of the penalty, or both.

(3) Within 20 calendar days after the date on which the individualized skills and socialization provider receives a written notice of the final statement of violations, the provider may:

(A) agree to the final statement of violations in writing, including the recommended administrative penalty; or

(B) submit a written request for an administrative hearing to HHSC.

(h) After HHSC receives the plan of correction as required by §559.233(f) of this division, HHSC notifies the individualized skills and socialization provider whether the plan is approved or not approved.

(1) If HHSC does not approve a plan of correction, the individualized skills and socialization provider must submit a revised plan of correction within five business days after the date of the HHSC notice that the plan of correction was not approved. After HHSC receives the revised plan of correction, HHSC notifies the individualized skills and socialization provider whether the revised plan is approved or not approved.

(2) If HHSC approves a plan of correction, HHSC notifies the individualized skills and socialization provider in writing that the plan of correction has been approved, and HHSC takes the following actions to determine if the individualized skills and socialization provider has completed the corrective action as outlined on the approved plan of correction:

(A) HHSC may request that the individualized skills and socialization provider submit evidence of corrective action; and

(B) HHSC may conduct:

(i) for a substantial violation, a follow-up survey after the date specified in the plan of correction for correcting the violation but within 45 calendar days after the survey exit conference; or

(ii) for a violation that is non-substantial, an off-site desk review or a post 45-day follow-up survey based on HHSC discretion.

(i) If an individualized skills and socialization provider does not submit a plan of correction as required by §559.233(f) of this division or a revised plan of correction required by subsection (h) of this section, or if HHSC notifies the individualized skills and socialization provider that a revised plan of correction is not approved, HHSC may impose administrative penalties in accordance with §559.253 of this division (relating to Administrative Penalties).

(j) If an individualized skills and socialization provider corrects a violation, the individualized skills and socialization provider must maintain the correction until the first anniversary of the date the correction was made.

(k) If an individualized skills and socialization provider fails to maintain a correction in accordance with subsection (j) of this section, HHSC may assess an administrative penalty equal to three times the amount of the original penalty assessed, but not collected. HHSC

does not provide the individualized skills and socialization provider an opportunity to correct the subsequent violation.

(l) If HHSC determines from a follow-up survey described in subsection (h)(2)(B)(i) of this section that the individual skills and socialization provider has completed a corrective action for a substantial violation, the administrative penalty associated with the substantial violation stops accruing on the date the corrective action was completed, as determined by HHSC.

(m) If HHSC determines from a follow-up survey described in subsection (h)(2)(B)(i) of this section that the individualized skills and socialization provider has not completed the corrective action for a substantial violation, HHSC may:

(1) continue to impose an administrative penalty and conduct a second follow-up survey to determine if the individualized skills and socialization provider completed the corrective action;

(2) impose a license suspension or closing order against the individualized skills and socialization provider; or

(3) deny or revoke the license of the individualized skills and socialization provider.

(n) If HHSC determines from a follow-up survey or off-site desk review described in subsection (h)(2)(B)(ii) of this section that the individualized skills and socialization provider has completed the corrective action for a violation that is non-substantial, HHSC does not impose an administrative penalty for the non-substantial violation.

(o) If HHSC determines from a follow-up survey or off-site desk review described in subsection (h)(2)(B)(ii) of this section that the individualized skills and socialization provider has not completed the corrective action for a violation that is non-substantial, HHSC:

(1) imposes an administrative penalty for the non-substantial violation in accordance with §559.253 of this division;

(2) notifies the individualized skills and socialization provider of the administrative penalty; and

(3) conducts a survey:

(A) after the date of the post 45-day exit conference of the follow-up survey; or

(B) after the date of the exit conference of the post 45-day follow-up survey if the program provider has submitted evidence of corrective action to HHSC during the 30-day period.

(p) If an individualized skills and socialization provider cannot resolve a dispute regarding a violation of regulations, the individualized skills and socialization provider is entitled to an informal dispute resolution (IDR) as outlined in §559.233(g) of this division.

(q) If HHSC determines that the individualized skills and socialization provider committed any of the actions described in §559.253(a) of this division, HHSC may:

(1) impose an administrative penalty against the individualized skills and socialization provider as described in §559.253 of this division;

(2) impose a non-emergency license suspension against the individualized skills and socialization provider as described in §559.247 of this division (relating to Nonemergency Suspension); or

(3) deny or revoke the license of the individualized skills and socialization provider as described in §559.215 of this subchapter (relating to Criteria for Denying a License or Renewal of a License) and §559.249 of this division (relating to Revocation).

(r) HHSC does not cite an individualized skills and socialization provider for violation of a regulatory requirement based solely on the action or inaction of a person who is not an employee, contractor, or volunteer of the individualized skills and socialization provider. HHSC may cite the individualized skills and socialization provider for violation of a regulatory requirement based on the individualized skills and socialization provider's response to the action or inaction of such a person.

§559.257. Administrative Hearings.

(a) An administrative hearing is held in accordance with Chapter 110 of this title (relating to Hearings Under the Administrative Procedure Act), Texas Government Code Chapter 2001, Subchapter I (relating to Administrative Procedure), and Texas Administrative Code, Title 1, Chapter 357, Subchapter I (relating to Hearings Under the Administrative Procedure Act).

(b) An administrative law judge sets a hearing date and gives notice of the hearing if an individualized skills and socialization provider is assessed an administrative penalty and requests a hearing.

(c) The requested hearing is held before an administrative law judge who makes findings of fact and conclusions of law regarding the occurrence of a violation under Texas Human Resources Code Chapter 103, a rule adopted under this chapter, or a term of a license issued under this chapter.

(d) Based on the findings of fact and conclusions of law and the recommendation of the administrative law judge, the executive commissioner or designee, by order, finds:

(1) a violation has occurred and assesses an administrative penalty; or

(2) a violation has not occurred.

(e) The executive commissioner or designee provides notice of the findings made under subsection (d) of this section to the individualized skills and socialization provider charged with a violation. If the executive commissioner finds that a violation has occurred, the executive commissioner or designee provides written notice to the provider of:

(1) the findings;

(2) the amount of the administrative penalty;

(3) the rate of interest payable on the penalty and the date on which interest begins to accrue; and

(4) the provider's right to judicial review of the order of the executive commissioner.

(f) Not later than the 30th day after the date on which the order of the executive commissioner or designee is final, the individualized skills and socialization provider assessed an administrative penalty must:

(1) pay the full amount of the penalty; or

(2) file a petition for judicial review contesting the occurrence of the violation, the amount of the penalty, or both.

(g) Notwithstanding subsection (e) of this section, HHSC may permit the individualized skills and socialization provider to pay an administrative penalty in installments.

(h) If an individualized skills and socialization provider does not pay an administrative penalty within the period provided by subsection (f) or (g) of this section or in accordance with the installment plan permitted by HHSC:

(1) the penalty is subject to interest; and

(2) HHSC may refer the matter to the attorney general for collection of the penalty and interest.

(i) Interest accrues:

(1) at a rate equal to the rate charged on loans to depository institutions by the New York Federal Reserve Bank; and

(2) for the period beginning on the day after the date on which the penalty becomes due and ending on the date the penalty is paid.

(j) Accrued interest on the amount remitted by the executive commissioner or designee must be paid:

(1) at a rate equal to the rate charged on loans to depository institutions by the New York Federal Reserve Bank; and

(2) for the period beginning on the date the penalty is paid and ending on the date the penalty is remitted to the individualized skills and socialization provider.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502250
Karen Ray
Chief Counsel
Health and Human Services Commission
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 438-3161

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TITLE 30. ENVIRONMENTAL QUALITY

PART 1. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHAPTER 60. COMPLIANCE HISTORY

30 TAC §60.1, §60.2

The Texas Commission on Environmental Quality (commission or TCEQ) proposes amendments to 30 Texas Administrative Code (TAC) §60.1 and §60.2.

Background and Summary of the Factual Basis for the Proposed Rules

The commission proposes revisions to Chapter 60 to implement certain requirements of Senate Bill (SB) 1397, regarding compliance history. SB 1397, 88th Legislature, 2023, Section 13, amended Texas Water Code (TWC) §5.754 requiring the commission to consider major, moderate, and minor violations when determining repeat violators. This proposed rulemaking also addresses management recommendations adopted by the Sunset Advisory Commission that were not included in SB 1397 for the commission to review and update the agency's compliance history rating formula to ensure it accurately reflects a regulated entity's record of violations, including considerations of site complexity and cumulative violations or repeating violations; and to regularly update compliance history ratings.

Section by Section Discussion

§60.1, Compliance History

The commission proposes revisions to §60.1(a)(6) and (7) to establish the effective date of the proposed rule. The commission will continue to use the version of the rule in effect at the time the compliance history classification was calculated in accordance with §60.1(b). For example, when an application for a permit is received by the executive director, the version of Chapter 60 in effect at the time the application is received will be the version used for compliance history purposes. The commission may consider new compliance history information as it deems necessary.

The proposal amends §60.1(b) to change the compliance period for enforcement actions to be calculated from the initial enforcement screening date. The compliance history period for an enforcement action is currently based on the date of the initial mailing of the enforcement settlement offer or petition, whichever occurs first. Since complicated cases may take substantial time to develop, the compliance history period could change while the settlement offer or petition is being drafted. Changing the start of the compliance period to the initial screening of an enforcement action means the compliance history will more closely reflect the performance of the site at the time the violations were documented as opposed to several months later. This provides greater certainty to the regulated community as to how an entity is performing at the time an enforcement action begins. This also means a site's compliance history will remain the same throughout the drafting and review process of the initial proposed agreed order or the petition instead of requiring additional reviews to verify whether the compliance history has changed during the process. In addition, clarification is made on how Notices of Violation are considered consistent with changes to §60.2(f).

Proposed §60.1(c)(8) changes the language referencing the Texas Environmental, Health, and Safety Audit Privilege Act. The Act was amended by the 85th Legislature in 2017 and the proposed language recognizes this change.

§60.2, Classification

The proposal amends §60.2(a) to change the frequency that the executive director shall evaluate the compliance history of each site from annually to bi-annually. This implements a management recommendation adopted by the Sunset Advisory Commission to regularly update an entity's compliance history rating. The commission proposes that compliance histories be evaluated on March 1st and September 1st each year. Since 2002, when the rule originally established an annual review, technological advances have made it possible for the agency to increase the number of reviews per year without overburdening agency resources. Bi-annual reviews will allow for appropriate planning for announced and unannounced investigations, as well as increased oversight of unsatisfactory performers. More frequent evaluations better allow the commission to consider whether proceedings should be initiated to revoke a permit, or to amend a permit where statutes allow, of an unsatisfactory performer. The commission considered other evaluation periods and determined that evaluations more frequent than bi-annually may require shortening the appeal window to ensure appeal reviews could be completed before the next evaluation period begins.

The proposal amends §60.2(c) to change the methodology of grouping regulated entities from reliance on the North American Industry Classifications System (NAICS) to use of complexity points described in §60.2(e) as the commission has determined complexity to be a more accurate measurement criterion. In 2002, the commission determined Standard Industrial Classification (SIC) codes did not adequately capture the environmental

complexity of the regulated community. In 2012, the commission listed NAICS codes as an option for grouping. However, over time, the commission found that the self-reported NAICS codes were frequently incorrect, inaccurate, or failed to fully describe the operations of the regulated site from an environmental impact standpoint. Therefore, the commission has not been able to effectively use NAICS codes for complexity determinations. The commission proposes to use the complexity formula to establish groupings to improve accuracy and provide certainty to the regulated public as they are already familiar with the formula and its impact on a site.

The proposal amends §60.2(f) to reflect changes to the way in which the commission evaluates repeat violators as required by SB 1397. Previously, in determining whether an entity was a repeat violator, the commission evaluated only major violations of the same nature and the same environmental media that occurred during the five-year compliance period. Under the proposed rule, in accordance with SB 1397, the commission will evaluate major, moderate, and minor violations of the same nature and environmental media that occurred during the five-year compliance period.

The new formula considers "repeat violation points" for each violation of the same nature and the same environmental media documented in any final enforcement orders, court judgments, and criminal convictions that occurred at least three times during the five-year compliance period. The number of "repeat violation points" varies by classification of the violation with each minor violation receiving 2 repeat violation points, each moderate violation receiving 10 points, and each major violation receiving 50 points. The total of all repeat violation points assessed to a regulated entity is used to determine whether the regulated entity has exceeded the repeat violation point thresholds to be classified as a repeat violator. The commission has established repeat violation point thresholds based on complexity points. Regulated entities with 15 or more complexity points and 150 or more "repeat violation points" will be classified as a repeat violator, while regulated entities with less than 15 complexity points and 100 or more "repeat violation points" will also be classified as a repeat violator.

The commission proposes changing §60.2(f)(1) and (2) and adding §60.2(f)(3). Proposed §60.2(f)(1) adds moderate and minor violations to repeat violator consideration and removes the requirement that violations be documented on separate occasions. Currently, multiple violations of the same type may be consolidated into a single enforcement action. Historically, the commission has considered "separate occasion" to mean individual orders or enforcement actions. For example, if a regulated entity had two unauthorized discharges within one compliance year and the entity signed a single agreed order that contained both major violations, the commission treated it as a single major violation for purposes of the repeat violator criteria. The legislative directive of SB 1397 to include all minor, moderate, and major violations requires the removal of the "separate occasion" language to ensure all violations are considered. The change allows the commission to consider all repeat occurrences of similar violations documented during the five-year evaluation period rather than the number of orders or enforcement actions that contained similar violations.

Proposed §60.2(f)(2)(A) - (C) establishes "repeat violation point" values based on the classification of the violation. Each violation of the same nature and the same environmental media documented in any final enforcement orders, court judgments, and criminal convictions that occurred at least three times during the five-year compliance period is assessed repeat violation points based on the classification of the violation. Each minor violation receives 2 repeat violation points, each moderate violation receives 10 points, and each major violation receives 50 points. This methodology allows the commission to clearly differentiate between repeat violators with significant actual or potential environmental harm from those entities that have repeat violations with minimal actual or potential environmental harm. For example, repeating a minor violation five times during a five-year period would be equally weighted with a single moderate violation, and repeating the same moderate violation five times during a five-year period would be weighted equally to one major violation.

Proposed §60.2(f)(3) establishes repeat violation point thresholds, based on complexity points, to determine repeat violator classifications. Under the proposal, a regulated entity is a repeat violator when: the site has less than a total of 15 complexity points and 100 or more repeat violation points; or the site has 15 or more complexity points and 150 or more repeat violation points. This approach continues to use 15 complexity points as the threshold and expands the criteria for repeat violators from three major violations for higher complex entities (150 points) to a combination of minor, moderate, and major violations (total 150 points) and two major violations for less complex entities (100 points) to a combination of minor, moderate and major violations (total 100 points). These thresholds ensure that the commission continues to hold repeat violators accountable without reducing environmental protections or standards. For example, higher complex regulated entities may reach the threshold by repeating the same moderate violation fifteen times within a five-year period, repeating the same minor violation seventy-five times within a five-year period, or some combination of violation points to reach the 150-point threshold.

The proposal moves "Repeat Violator Exemption" from existing §60.2(f)(2) to proposed §60.2(f)(4).

Proposed §60.2(g)(1)(L) changes the language referencing the Texas Environmental, Health, and Safety Audit Privilege Act. The Act was amended by the 85th Legislature in 2017 and the proposed language recognizes this change.

Proposed §60.2(g)(2) changes the site rating ranges for regulated entities. Currently, there is a common set of ranges for entities of all complexities. The commission proposes creating separate classification groups based on complexity points to address the Sunset Advisory Commission's management recommendation to compare entities of similar complexity to one another. The proposed rule establishes separate ranges for higher complex entities and less complex entities. Proposed §60.2(g)(2)(A) establishes the classification rating ranges for regulated entities with a complexity point total less than 15. For a regulated entity classified as less complex, a high performer is defined as having less than 0.10 points. A satisfactory performer is defined as having 0.10 points to 60 points. An unsatisfactory performer is defined as having more than 60 points.

Proposed §60.2(g)(2)(B) establishes the classification rating ranges for regulated entities with a complexity point total of 15 or more. A high performer is defined as having less than 0.10 points. A satisfactory performer is defined as having 0.10 points to 55 points. An unsatisfactory performer is defined as having more than 55 points.

As noted by the Sunset Advisory Commission, the compliance history rule calculation methodology disproportionately impacts less complex entities. The commission recognizes that, in general, less complex entities have fewer resources and face different challenges than their higher complexity counterparts. While the higher complexity entities are generally much larger in size, they tend to have more resources, represent a much smaller group of the regulated community, and typically have a potentially larger environmental footprint. The proposed rule allows for different classification thresholds for each complexity grouping, thereby accounting for their differences.

Proposed §60.2(g)(3)(A), (B)(i) and (ii) removes the specific point value that a regulated entity will receive following the application of a mitigating factor. Should a mitigating factor be granted to a regulated entity, the entity's rating will be adjusted to the maximum rating within the satisfactory classification for the entity's complexity point group. For regulated entities with less than 15 complexity points, the rating will be adjusted to 60. For regulated entities with 15 or more complexity points, the rating will be adjusted to 55.

Proposed §60.2(i) revises how a regulated entity can review their pending compliance history rating to match current practice by removing the submission of a Compliance History Review Form and replacing it with the registration for the Advanced Review of Compliance History (ARCH).

Fiscal Note: Costs to State and Local Government

Kyle Girten, analyst in the Budget and Planning Division, has determined that for the first five-year period the proposed rules are in effect, fiscal implications are anticipated for TCEQ and fiscal implications may result for units of local government as a result of implementation of the proposed rule. No fiscal implications are anticipated for other units of state government.

The General Appropriations Act (HB 1, 88th Legislature) authorized six full time equivalent (FTE) employees and $315,000 in funding to implement statutory changes to TWC §5.754 in SB 1397, 88th Legislature, 2023 and directives from the Sunset Advisory Commission that relate to this rulemaking. The proposed rulemaking would require TCEQ to update its compliance history twice annually instead of once per year (§60.2), and the rulemaking would also result in the agency needing to modify its compliance history application. The agency and Advanced Review of Compliance History website would need to be updated.

Local governmental entities which are permittees that are subject to the requirements of Chapter 60 could have indirect fiscal impacts from this rulemaking. This rule applies to approximately 400,000 entities, and this number includes businesses as well as local government entities. Compliance history information must be used by TCEQ when making decisions regarding permitting, enforcement, announced investigations, and participation in innovative programs (§60.3). Should the proposed rulemaking result in a change to whether an entity is classified as a satisfactory/unsatisfactory performer or repeat violator (§60.2), such an entity may have increased or decreased costs associated with permitting or administrative penalties. Ultimately, the fiscal impact on a regulated entity is dependent on compliance or non-compliance with the applicable environmental rules and regulations.

Public Benefits and Costs

Mr. Girten determined that for each year of the first five years the proposed rules are in effect, the public will benefit from having rules that are consistent with state law, specifically SB 1397 from the 88th Regular Legislative Session (2023) and directives from the Sunset Advisory Commission. The public will also benefit from having a more regularly updated record of regulated entities compliance status because the proposed rulemaking would require TCEQ to update compliance history information twice annually instead of once per year (§60.2).

Businesses which are permittees that are subject to the requirements of Chapter 60 could have indirect fiscal impacts from this rulemaking. Compliance history information must be used by TCEQ when making decisions regarding permitting, enforcement, announced investigations, and participation in innovative programs (§60.3). Should the proposed rulemaking result in a change to whether an entity is classified as a satisfactory/unsatisfactory performer or repeat violator (§60.2), such an entity may have increased or decreased costs associated with permitting or administrative penalties. Ultimately, the fiscal impact on a regulated entity is dependent on compliance or non-compliance with the applicable environmental rules and regulations.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rulemaking does not adversely affect a local economy in a material way for the first five years that the proposed rule is in effect.

Rural Community Impact Statement

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. The amendments would apply statewide and have the same effect in rural communities as in urban communities.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rule for the first five-year period the proposed rules are in effect. Based on directives from the Sunset Advisory Commission, the proposed rulemaking is designed to address inequities between small and large entities. With the changes proposed in this rulemaking and the creation of separate groups based on complexity points, less complex entities will be separated from larger, higher complexity entities and compared to similarly complex sites when determining satisfactory rating classification and repeat violator status. This will allow each of the two groups to be held to separate standards which account for the unique opportunities and challenges faced by each group.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rule does not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does

not require the creation of new employee positions, eliminate current employee positions, nor require an increase or decrease in fees paid to the agency. The proposed rulemaking amends an existing regulation, and it does not create, expand, repeal, or limit this regulation. The proposed rulemaking does not increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rule should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis

The commission has reviewed the proposed rulemaking in light of the regulatory analysis requirements of Texas Government Code §2001.0225, and determined that the rulemaking is not subject to §2001.0225 because the proposed rule changes do not meet the definition of a "Major environmental rule" as defined in that statute. Although the intent of the proposed rule modifications are to protect the environment and reduce the risk to human health from environmental exposure, they do not adversely affect, in a material way, the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. Instead, the proposed rule changes merely modify the standards for the classification of a person's compliance history by setting the number of major, moderate, and minor violations needed to be classified as a repeat violator, to review and update the agency's compliance history rating formula to ensure it accurately reflects a regulated entity's record of violations, and to update compliance history ratings more often than once per fiscal year. The requirements for establishing standards for the classification of a person's compliance history are contained in TWC, §5.754.

The proposed rule modifications are designed to protect the environment, the public health, and the public safety of the state and all sectors of the state. Furthermore, the proposed rule modifications do not meet any of the four applicability requirements listed in §2001.0225(a). They do not exceed a standard set by federal law, because there is no comparable federal law. They do not exceed an express requirement of state law, because they are consistent with the requirements of TWC, §5.754. The proposed rule modifications do not exceed the requirements of a delegation agreement because there is no applicable delegation agreement. They are not proposed to be adopted solely under the general powers of the agency but will be adopted under the express requirements of TWC §5.754 and management recommendations adopted by the Sunset Advisory Commission.

The commission invites public comment on the draft regulatory impact analysis determination.

Takings Impact Assessment

The commission evaluated the proposed rules and performed an assessment of whether the proposed rules constitute a taking under TGC, Chapter 2007. The specific purpose of the proposed rules is to implement certain requirements of Senate Bill (SB) 1397 and other legislative directives, regarding compliance history. The proposed rules will substantially advance this stated purpose by modifying the standards for the classification of a person's compliance history by setting the number of major, moderate, and minor violations needed to be classified as a repeat violator, to review and update the agency's compliance history rating formula to ensure it accurately reflects a regulated entity's record of violations, and to update compliance history ratings more often than once per fiscal year.

Promulgation and enforcement of these proposed rules will be neither a statutory nor a constitutional taking of private real property. Specifically, the subject proposed regulations do not affect a landowner's rights in private real property because this rulemaking does not burden (constitutionally); nor restrict or limit the owner's right to property and reduce its value by 25% or more beyond that which would otherwise exist in the absence of the regulations. In other words, the proposed rules will not burden private real property because they modify the standards for the classification of a person's compliance history by setting the number of major, moderate, and minor violations needed to be classified as a repeat violator, to review and update the agency's compliance history rating formula to ensure it accurately reflects a regulated entity's record of violations, and to update compliance history ratings more often than once per fiscal year. The subject proposed rules do not affect a landowner's rights in private real property.

Consistency with the Coastal Management Program

The commission reviewed the proposed rulemaking and found that the proposal is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 et seq., and therefore must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the proposed rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §29.22, and found the proposed rulemaking consistent with the applicable CMP goals and policies.

CMP goals applicable to the proposed rule include: 31 TAC §26.12(1), to protect, preserve, restore, and enhance the diversity, quality, quantity, functions, and values of coastal natural resource areas (CNRAs); 31 TAC §26.12(2), to ensure sound management of all coastal resources by allowing for compatible economic development and multiple human uses of the coastal zone; 31 TAC §26.12(3), to minimize loss of human life and property due to the impairment and loss of protective features of CNRAs; 31 TAC §26.12(5), to balance the benefits from economic development and multiple human uses of the coastal zone, the benefits from protecting, preserving, restoring, and enhancing CNRAs, the benefits from minimizing loss of human life and property, and the benefits from public access to and enjoyment of the coastal zone; 31 TAC §26.12(6), to coordinate agency and subdivision decision-making affecting CNRAs by establishing clear, objective policies for the management of CNRAs; 31 TAC §26.12(7), to make agency and subdivision decision-making affecting CNRAs efficient by identifying and addressing duplication and conflicts among local, state, and federal regulatory and other programs for the management of CNRAs; and 31 TAC §26.12(8), to make agency and subdivision decision-making affecting CNRAs more effective by employing the most comprehensive, accurate, and reliable information and scientific data available and by developing, distributing for public comment, and maintaining a coordinated, publicly accessible geographic information system of maps of the coastal zone and CNRAs at the earliest possible date. The commission has reviewed the proposed rule for consistency with applicable goals of the CMP and determined that the proposed rule is consistent with the intent of the applicable goals and will not result in any significant adverse effect to CNRAs.

CMP policies applicable to the proposed rule include: 31 TAC §26.19, Construction and Operation of Solid Waste Treatment, Storage, and Disposal Facilities; 31 TAC §26.20, Prevention, Response, and Remediation of Oil Spills; 31 TAC §26.21, Discharge of Municipal and Industrial Wastewater to Coastal Waters; 31 TAC §26.22, Nonpoint Source (NPS) Water Pollution;

31 TAC §26.23, Development in Critical Areas; 31 TAC §26.25, Dredging and Dredged Material Disposal and Placement; 31 TAC §26.28, Development Within Coastal Barrier Resource System Units and Otherwise Protected Areas on Coastal Barriers; and 31 TAC §26.32, Emission of Air Pollutants. This rulemaking does not relax existing standards for issuing permits related to the construction and operation of solid waste treatment, storage, and disposal facilities in the coastal zone or for governing the prevention of, response to, and remediation of coastal oil spills. This rulemaking does not relax existing commission rules and regulations governing the discharge of municipal and industrial wastewater to coastal waters, nor does it affect the requirement that the agency consult with the Department of State Health Services regarding wastewater discharges that could significantly adversely affect oyster reefs. This rulemaking does not relax the existing requirements that state agencies and subdivisions with the authority to manage NPS pollution cooperate in the development and implementation of a coordinated program to reduce NPS pollution in order to restore and protect coastal waters. Further, it does not relax existing requirements applicable to: areas with the potential to develop agricultural or silvicultural NPS water quality problems; on-site disposal systems; underground storage tanks; or Texas Pollutant Discharge Elimination System permits for stormwater discharges. This rulemaking does not relax the standards related to dredging; the discharge, disposal, and placement of dredge material; compensatory mitigation; and authorization of development in critical areas. This rulemaking does not relax existing standards for issuing permits related to development of infrastructure within Coastal Barrier Resource System Units and Otherwise Protected Areas. Rather, the intent of the rulemaking is to increase compliance with existing standards and rule requirements.

Promulgation and enforcement of this rule will not violate or exceed any standards identified in the applicable CMP goals and policies because the proposed rule is consistent with these CMP goals and policies and because this rule does not create or have a direct or significant adverse effect on any coastal natural resource areas.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Announcement of Hearing

The commission will hold a hold a hybrid virtual and in-person public hearing on this proposal in Austin on August 18, 2025, at 10:00 a.m. in Building D, Room 191, located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing at 9:30 a.m.

Individuals who plan to attend the hearing virtually and want to provide oral comments and/or want their attendance on record must register by August 14, 2025. To register for the hearing, please email *Rules@tceq.texas.gov* and provide the following information: your name, your affiliation, your email address, your phone number, and whether or not you plan to provide oral comments during the hearing. Instructions for participating in the hearing will be sent on August 15, 2025, to those who register for the hearing.

For the public who do not wish to provide oral comments but would like to view the hearing may do so at no cost at:

https://events.teams.microsoft.com/event/d758c7a2-3f27-4605-bfe6-99749d686a8a@871a83a4-a1ce-4b7a-8156-3bcd93a08fba

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Gwen Ricco, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted at:

https://tceq.commentinput.com/comment/search. File size restrictions may apply to comments being submitted via the TCEQ Public Comments system. All comments should reference Rule Project Number 2024-043-060-CE. The comment period closes on August 25, 2025. Please choose one of the methods provided to submit your written comments.

Copies of the proposed rulemaking can be obtained from the commission's website at

https://www.tceq.texas.gov/rules/propose_adopt.html. For further information, please contact Krista Clement, Office of Compliance and Enforcement, (512) 239-1234.

Statutory Authority

The rule amendments are proposed under the authority of Texas Water Code (TWC) §5.753, concerning Standards for Evaluating and Using Compliance History, and TWC, §5.754, as amended by Senate Bill 1397, 88th Legislature, 2023, Section 13, concerning Classification and Use of Compliance History, which authorize rulemaking to establish compliance history standards, call upon the compliance history program to ensure consistency, and establish criteria for classifying a repeat violator. These provisions do not restrict the application of such classifications to be at specific intervals. Additional authority exists under TWC, §5.102, concerning General Powers, which provides the commission with the general powers to carry out its duties under the TWC; and TWC, §5.103, concerning Rules, which provides the commission the authority to adopt any rules necessary to carry out its powers and duties under the provisions of the TWC and other laws of this state.

The proposed rule amendments implements TWC, §§5.102, 5.103, 5.753, and 5.754.

§60.1. Compliance History.

(a) Applicability. The provisions of this chapter are applicable to all persons subject to the requirements of Texas Water Code (TWC), Chapters 26, 27, and 32 and Texas Health and Safety Code (THSC), Chapters 361, 375, 382, and 401.

(1) Specifically, the agency will utilize compliance history when making decisions regarding:

(A) the issuance, renewal, amendment, modification, denial, suspension, or revocation of a permit;

(B) enforcement;

(C) the use of announced investigations; and

(D) participation in innovative programs.

(2) For purposes of this chapter, the term "permit" means licenses, certificates, registrations, approvals, permits by rule, standard permits, or other forms of authorization.

(3) With respect to authorizations, this chapter only applies to forms of authorization, including temporary authorizations, that require some level of notification to the agency, and which, after receipt by the agency, requires the agency to make a substantive review of and approval or disapproval of the authorization required in the notification or submittal. For the purposes of this rule, "substantive review of and approval or disapproval" means action by the agency to determine, prior to issuance of the requested authorization, and based on the notification or other submittal, whether the person making the notification has satisfied statutory or regulatory criteria that are prerequisites to issuance of such authorization. The term "substantive review or response" does not include confirmation of receipt of a submittal.

(4) Notwithstanding [~~Regardless of the applicability of~~] paragraphs (2) and (3) of this subsection, this chapter does not apply to certain permit actions such as:

(A) voluntary permit revocations;

(B) minor amendments and nonsubstantive corrections to permits;

(C) Texas pollutant discharge elimination system and underground injection control minor permit modifications;

(D) Class 1 solid waste modifications, except for changes in ownership;

(E) municipal solid waste Class I modifications, except for temporary authorizations and municipal solid waste Class I modifications requiring public notice;

(F) permit alterations;

(G) administrative revisions; and

(H) air quality new source review permit amendments which meet the criteria of §39.402(a)(3)(A) - (C) and (5)(A) - (C) of this title (relating to Applicability to Air Quality Permits and Permit Amendments) and minor permit revisions under Chapter 122 of this title (relating to Federal Operating Permits Program).

(5) Further, this chapter does not apply to occupational licensing programs under the jurisdiction of the commission.

(6) Not later than March [~~September~~] 1, 2026 [~~2012~~], the executive director shall develop compliance histories with the components specified in this chapter. Prior to March [~~September~~] 1, 2026 [~~2012~~], the executive director shall continue in effect the standards and use of compliance history for any action (permitting, enforcement, or otherwise) that were in effect before March [~~September~~] 1, 2026 [~~2012~~].

(7) Effective March [~~September~~] 1, 2026 [~~2012~~], this chapter shall apply to the use of compliance history in agency decisions relating to:

(A) applications submitted on or after this date for the issuance, amendment, modification, or renewal of permits;

(B) inspections and flexible permitting;

(C) a proceeding that is initiated or an action that is brought on or after this date for the suspension or revocation of a permit or the imposition of a penalty in a matter under the jurisdiction of the commission; and

(D) applications submitted on or after this date for other forms of authorization, or participation in an innovative program, except for flexible permitting.

(8) If a motion for reconsideration or a motion to overturn is filed under §50.39 or §50.139 of this title (relating to Motion for Reconsideration; and Motion to Overturn Executive Director's Decision) with respect to any of the actions listed in paragraph (4) of this subsection, and is set for commission agenda, a compliance history shall be prepared by the executive director and filed with the Office of the Chief Clerk no later than six days before the Motion is considered on the commission agenda.

(b) Compliance period. The compliance history period includes the five years prior to the date the permit application is received by the executive director; the five-year period preceding the date of the initial enforcement screening [~~initiating an enforcement action with an initial enforcement settlement offer or the filing date of an Executive Director's Preliminary Report, whichever occurs first~~]; for purposes of determining whether an announced investigation is appropriate, the five-year period preceding an investigation; or the five years prior to the date the application for participation in an innovative program is received by the executive director. The compliance history period may be extended beyond the date the application for the permit or participation in an innovative program is received by the executive director, up through completion of review of the application. Notices [~~Except as used in §60.2(f) of this title (relating to Classification) for determination of repeat violator, notices~~] of violation may only be used as a component of compliance history for a period not to exceed one year from the date of issuance.

(c) Components. The compliance history shall include multimedia compliance-related information about a person, specific to the site which is under review, as well as other sites which are owned or operated by the same person. The components are:

(1) any final enforcement orders, court judgments, and criminal convictions of this state relating to compliance with applicable legal requirements under the jurisdiction of the commission. "Applicable legal requirement" means an environmental law, regulation, permit, order, consent decree, or other requirement;

(2) notwithstanding [~~regardless of~~] any other provision of the TWC, orders developed under TWC, §7.070 and approved by the commission on or after February 1, 2002;

(3) to the extent readily available to the executive director, final enforcement orders, court judgments, consent decrees, and criminal convictions relating to violations of environmental rules of the United States Environmental Protection Agency;

(4) chronic excessive emissions events. For purposes of this chapter, the term "emissions event" is the same as defined in THSC, §382.0215(a);

(5) any information required by law or any compliance-related requirement necessary to maintain federal program authorization;

(6) the dates of investigations;

(7) all written notices of violation for a period not to exceed one year from the date of issuance of each notice of violation, including written notification of a violation from a regulated person, issued on or after September 1, 1999, except for those administratively determined to be without merit;

(8) the date of letters notifying the executive director of an intended audit conducted and any violations disclosed and having received immunity under the Texas Environmental, Health, and Safety Audit Privilege Act (Audit Act), 85th Legislature, 2017, TEX.

HEALTH AND SAFETY CODE ch. 1101 [~~75th Legislature, 1997, TEX. REV. CIV. STAT. ANN. art. 4447cc (Vernon's)~~];

(9) an environmental management system approved under Chapter 90 of this title (relating to Innovative Programs), if any, used for environmental compliance;

(10) any voluntary on-site compliance assessments conducted by the executive director under a special assistance program;

(11) participation in a voluntary pollution reduction program; and

(12) a description of early compliance with or offer of a product that meets future state or federal government environmental requirements.

(d) Change in ownership. In addition to the requirements in subsections (b) and (c) of this section, if ownership of the site changed during the five-year compliance period, a distinction of compliance history of the site under each owner during that five-year period shall be made. Specifically, for any part of the compliance period that involves a previous owner, the compliance history will include only the site under review. For the purposes of this rule, a change in operator shall be considered a change in ownership if the operator is a co-permittee.

§60.2. Classification.

(a) Classifications. Effective March 1, 2026 [~~Beginning September 1, 2002~~], the executive director shall evaluate the compliance history of each site and classify each site and person as needed for the actions listed in §60.1(a)(1) of this title (relating to Compliance History). On September 1, 2026 [~~2003~~], and semi-annually thereafter, the executive director shall evaluate the compliance history of each site, and classify each site and person. For the purposes of classification in this chapter, and except with regard to portable units, "site" means all regulated units, facilities, equipment, structures, or sources at one street address or location that are owned or operated by the same person. Site includes any property identified in the permit or used in connection with the regulated activity at the same street address or location. A "site" for a portable regulated unit or facility is any location where the unit or facility is or has operated. Each site and person shall be classified as:

(1) a high performer, which has an above-satisfactory compliance record;

(2) a satisfactory performer, which generally complies with environmental regulations; or

(3) an unsatisfactory performer, which performs below minimal acceptable performance standards established by the commission.

(b) Inadequate information. For purposes of this rule, "inadequate information" shall be defined as no compliance information. If there is no compliance information about the site at the time the executive director develops the compliance history classification, then the classification shall be designated as "unclassified." The executive director may conduct an investigation to develop a compliance history.

(c) Groupings. Sites will be divided into groupings based on complexity [~~North American Industry Classifications Systems (NAICS) codes~~] or other information available to the executive director. The complexity calculation is described in subsection (e) of this section (relating to Classification).

(d) Major, moderate, and minor violations. In classifying a site's compliance history, the executive director shall determine whether a documented violation of an applicable legal requirement is of major, moderate, or minor significance.

(1) Major violations are:

(A) a violation of a commission enforcement order, court order, or consent decree;

(B) operating without required authorization or using a facility that does not possess required authorization;

(C) an unauthorized release, emission, or discharge of pollutants that caused, or occurred at levels or volumes sufficient to cause, adverse effects on human health, safety, or the environment;

(D) falsification of data, documents, or reports; and

(E) any violation included in a criminal conviction, which required the prosecutor to prove a culpable mental state or a level of intent to secure the conviction.

(2) Moderate violations are:

(A) complete or substantial failure to monitor, analyze, or test a release, emission, or discharge, as required by a commission rule or permit;

(B) complete or substantial failure to submit or maintain records, as required by a commission rule or permit;

(C) not having an operator whose level of license, certification, or other authorization is adequate to meet applicable rule requirements;

(D) any unauthorized release, emission, or discharge of pollutants that is not classified as a major violation;

(E) complete or substantial failure to conduct a unit or facility inspection, as required by a commission rule or permit;

(F) any violation included in a criminal conviction, for a strict liability offense, in which the statute plainly dispenses with any intent element needed to be proven to secure the conviction; and

(G) maintaining or operating regulated units, facilities, equipment, structures, or sources in a manner that could cause an unauthorized or noncompliant release, emission, or discharge of pollutants.

(3) Minor violations are:

(A) performing most, but not all, of a monitoring or testing requirement, including required unit or facility inspections;

(B) performing most, but not all, of an analysis or waste characterization requirement;

(C) performing most, but not all, of a requirement addressing the submittal or maintenance of required data, documents, notifications, plans, or reports; and

(D) maintaining or operating regulated units, facilities, equipment, structures, or sources in a manner not otherwise classified as moderate.

(e) Complexity Points. All sites classified shall have complexity points as follows:

(1) Program Participation Points. A site shall be assigned Program Participation Points based upon its types of authorizations, as follows:

(A) four points for each permit type listed in clauses (i) - (viii) of this subparagraph issued to a person at a site:

(i) Radioactive Waste Disposal;

(ii) Hazardous or Industrial Non-Hazardous Storage Processing or Disposal;

(iii) Municipal Solid Waste Type I;

(iv) Prevention of Significant Deterioration;

(v) Phase I--Municipal Separate Storm Sewer System;

(vi) Texas Pollutant Discharge Elimination System (TPDES) or National Pollutant Discharge Elimination System (NPDES) Industrial or Municipal Major;

(vii) Nonattainment New Source Review; and

(viii) Underground Injection Control Class I/III;

(B) three points for each type of authorization listed in clauses (i) - (iv) of this subparagraph issued to a person at a site:

(i) Municipal Solid Waste Type I AE;

(ii) Municipal Solid Waste Type IV, V, or VI;

(iii) Municipal Solid Waste Type IV AE; and

(iv) TPDES or NPDES Industrial or Municipal Minor;

(C) two points for each permit type listed in clauses (i) - (iii) of this subparagraph issued to a person at a site or utilized by a person at a site:

(i) Title V Federal Operating Permit;

(ii) New Source Review individual permit; and

(iii) any other individual site-specific water quality permit not referenced in subparagraph (A) or (B) of this paragraph or any water quality general permit;

(D) one point for each type of authorization listed in clauses (i) - (xiii) of this subparagraph issued to a person at a site or utilized by a person at a site:

(i) Edwards Aquifer authorization;

(ii) Enclosed Structure permit or registration relating to the use of land over a closed Municipal Solid Waste landfill;

(iii) Industrial Hazardous Waste registration;

(iv) Municipal Solid Waste Tire Registrations;

(v) Other types of Municipal Solid Waste permits or registrations not listed in subparagraphs (A) - (C) of this paragraph;

(vi) Petroleum Storage Tank registration;

(vii) Radioactive Waste Storage or Processing license;

(viii) Sludge registration or permit;

(ix) Stage II Vapor Recovery registration;

(x) Municipal Solid Waste Type IX;

(xi) Permit by Rule requiring submission of an application under Chapter 106 of this title (relating to Permits by Rule);

(xii) Uranium license; and

(xiii) Air Quality Standard Permits.

(2) Size. Every site shall be assigned points based upon size as determined by the following:

(A) Facility Identification Numbers (FINs): The total number of FINS at a site will be multiplied by 0.02 and rounded up to the nearest whole number.

(B) Water Quality external outfalls:

(i) 10 points for a site with ten or more external outfalls;

(ii) 5 points for a site with at least five, but fewer than ten, external outfalls;

(iii) 3 points for sites with at least two, but fewer than five, external outfalls; and

(iv) 1 point for sites with one external outfall;

(C) Active Hazardous Waste Management Units (AHWMUs):

(i) 10 points for sites with 50 or more AHWMUs;

(ii) 5 points for sites with at least 20, but fewer than 50, AHWMUs;

(iii) 3 points for sites with at least ten, but fewer than 20, AHWMUs; and

(iv) 1 point for sites with at least one but fewer than ten AHWMUs.

(D) Small Entities shall receive 3 points. A small entity is defined as: a city with a population of less than 5,000; a county with a population of less than 25,000; or a small business. A small business is defined as any person, firm, or business which employs, by direct payroll and/or through contract, fewer than 100 full-time employees. A business that is a wholly owned subsidiary of a corporation shall not qualify as a small business if the parent organization does not qualify as a small business.

(E) Underground Storage Tanks (USTs) and Aboveground Storage Tanks (ASTs):

(i) 4 points for sites with 11 or more USTs;

(ii) 3 points for sites with five to ten USTs;

(iii) 3 points for sites with more than 11 ASTs;

(iv) 2 points for sites with three to four USTs;

(v) 2 points for sites with three to ten, ASTs;

(vi) 1 point for sites with one to two USTs; and

(vii) 1 point for sites with one to two ASTs.

(3) Nonattainment area points. Every site located in a nonattainment area shall be assigned 1 point.

(4) The subtotals from paragraphs (1) - (3) of this subsection shall be summed.

(f) Repeat violator.

(1) Repeat violator criteria. A person may be classified as a repeat violator at a site when[, ~~on~~] multiple[, ~~separate occasions,~~] major, moderate, or minor violations of the same nature and the same environmental media occurs during the preceding five-year compliance period [~~as provided in subparagraphs (A) and (B) of this paragraph~~]. Same nature is defined as violations that have the same root citation at the subsection level. For example, all rules under §334.50 of this title (relating to Release Detection) (e.g. §334.50(a) or (b)(2) of this title) would be considered same nature. The total complexity points for a site equals the sum of points assigned to a specific site in subsection (e) of this section. [~~A person is a repeat violator at a site when:~~]

[~~(A) the site has had a major violation(s) documented on at least two occasions and has less than a total of 15 complexity points; or~~]

[~~(B) the site has had a major violation(s) documented on at least three occasions.~~]

(2) Repeat violation points. Each repeat violation will be:

(A) Assigned 2 points for each minor violation as documented in any final enforcement orders, court judgments, and criminal convictions;

(B) Assigned 10 points for each moderate violation as documented in any final enforcement orders, court judgments, and criminal convictions; and

(C) Assigned 50 points for each major violation as documented in any final enforcement orders, court judgments, and criminal convictions.

(3) A person is a repeat violator at a site when the number of repeat violation points is:

(A) Equal to or greater than 150 for sites with 15 or more complexity points; or,

(B) Equal to or greater than 100 for sites with less than 15 complexity points.

(4) [~~(2)~~] Repeat violator exemption. The executive director shall designate a person as a repeat violator as provided in this subsection, unless the executive director determines the nature of the violations and the conditions leading to the violations do not warrant the designation.

(g) Formula. The executive director shall determine a site rating based upon the following method.

(1) Site rating. For the time period reviewed, the following calculations shall be performed based upon the compliance history at the site.

(A) The number of major violations contained in:

(i) any adjudicated final court judgments and default judgments, shall be multiplied by 160;

(ii) any non-adjudicated final court judgments or consent decrees without a denial of liability shall be multiplied by 140;

(iii) any non-adjudicated final court judgments or consent decrees containing a denial of liability, adjudicated final enforcement orders, and default orders, shall be multiplied by 120;

(iv) any final prohibitory emergency orders issued by the commission shall be multiplied by 120;

(v) any agreed final enforcement orders without a denial of liability shall be multiplied by 100; and

(vi) any agreed final enforcement orders containing a denial of liability shall be multiplied by 80.

(B) The number of moderate violations contained in:

(i) any adjudicated final court judgments and default judgments shall be multiplied by 115;

(ii) any non-adjudicated final court judgments or consent decrees without a denial of liability shall be multiplied by 95;

(iii) any non-adjudicated final court judgments or consent decrees containing a denial of liability, adjudicated final enforcement orders, and default orders, shall be multiplied by 75;

(iv) any agreed final enforcement orders without a denial of liability shall be multiplied by 60; and

(v) any agreed final enforcement orders containing a denial of liability shall be multiplied by 45.

(C) The number of minor violations contained in:

(i) any adjudicated final court judgments and default judgments shall be multiplied by 45;

(ii) any non-adjudicated final court judgments or consent decrees without a denial of liability shall be multiplied by 35;

(iii) any non-adjudicated final court judgments or consent decrees containing a denial of liability, adjudicated final enforcement orders, and default orders, shall be multiplied by 25;

(iv) any agreed final enforcement orders without a denial of liability shall be multiplied by 20; and

(v) any agreed final enforcement orders containing a denial of liability shall be multiplied by 15.

(D) The total number of points assigned for all resolved violations in subparagraphs (A) - (C) of this paragraph will be reduced based on achievement of compliance with all ordering provisions. For the first two years after the effective date of the enforcement order(s), court judgment(s), consent decree(s), and criminal conviction(s), the site will receive the total number of points assigned for violations in subparagraphs (A) - (C) of this paragraph. If all violations in subparagraphs (A) - (C) of this paragraph are resolved and compliance with all ordering provisions is achieved, for each enforcement order(s), court judgment(s), consent decree(s), and criminal conviction(s) :

(i) under two years old, the points associated with the violations in subparagraphs (A) - (C) of this paragraph will be multiplied by 1.0;

(ii) over two years old, the points associated with the violations in subparagraphs (A) - (C) of this paragraph will be multiplied by 0.75;

(iii) over three years old, the points associated with the violations in subparagraphs (A) - (C) of this paragraph will be multiplied by 0.50; and

(iv) over four years old, the points associated with the violations in subparagraphs (A) - (C) of this paragraph will be multiplied by 0.25.

(E) The number of major violations contained in any notices of violation shall be multiplied by 10.

(F) The number of moderate violations contained in any notices of violation shall be multiplied by 4.

(G) The number of minor violations contained in any notices of violation shall be multiplied by 1.

(H) The number of counts in all criminal convictions:

(i) under Texas Water Code (TWC), §§7.145, 7.152, 7.153, 7.162(a)(1) - (5), 7.163(a)(1) - (3), 7.164, 7.168 - 7.170, 7.176, 7.182, 7.183, and all felony convictions under the Texas Penal Code, TWC, Texas Health and Safety Code (THSC), or the United States Code (USC) shall be multiplied by 500; and

(ii) under TWC, §§7.147 - 7.151, 7.154, 7.157, 7.159, 7.160, 7.162(a)(6) - (8), 7.163(a)(4), 7.165 - 7.167, 7.171, 7.177 - 7.181, and all misdemeanor convictions under the Texas Penal Code, TWC, THSC, or the USC shall be multiplied by 250.

(I) The number of chronic excessive emissions events shall be multiplied by 100.

(J) The subtotals from subparagraphs (A) - (I) of this paragraph shall be summed.

(K) If the person is a repeat violator as determined under subsection (f) of this section, then 500 points shall be added to the total in subparagraph (J) of this paragraph. If the person is not a repeat violator as determined under subsection (f) of this section, then zero points shall be added to the total in subparagraph (J) of this paragraph.

(L) If the total in subparagraph (K) of this paragraph is greater than zero, then:

(i) subtract 1 point from the total in subparagraph (K) of this paragraph for each notice of an intended audit conducted under the Audit Act submitted to the agency during the compliance period; or

(ii) if a violation(s) was disclosed as a result of an audit conducted under the Audit Act [~~Texas Environmental, Health, and Safety Audit Privilege Act, (Audit Act), 75th Legislature, 1997, TEX. REV. CIV. STAT. ANN. art.4447cc (Vernon's)~~]; as amended, and the site received immunity from an administrative or civil penalty for that violation(s) by the agency, then the following number(s) shall be subtracted from the total in subparagraph (K) of this paragraph:

(I) the number of major violations multiplied by 10;

(II) the number of moderate violations multiplied by 4; and

(III) the number of minor violations multiplied by 1.

(M) The result of the calculations in subparagraphs (J) - (L) of this paragraph shall be divided by the number of investigations conducted during the compliance period multiplied by 0.1 plus the number of complexity points in subsection (e) of this section. If a site does not have any investigation points and the subtotal from subsection (e)(1) - (3) of this section equals zero, then one default point shall be used. Investigations that do not document any violations will be the only ones counted in the compliance history formula. The number of investigations multiplied by 0.1 shall be rounded up to the nearest whole number. If the value is less than zero, then the site rating shall be assigned a value of zero. For the purposes of this chapter, an investigation is a review or evaluation of information by the executive director or executive director's staff or agent regarding the compliance status of a site, excluding those investigations initiated by citizen complaints. An investigation, for the purposes of this chapter, may take the form of a site assessment, file or record review, compliance investigation, or other review or evaluation of information.

(N) If the person receives certification of an environmental management system (EMS) under Chapter 90 of this title (relating to Innovative Programs) and has implemented the EMS at the site for more than one year, then multiply the result in subparagraph (M) of this paragraph by 0.90, which is (1 - 0.10) and this is the maximum reduction that can be received for an EMS. If the person receives credit for a voluntary pollution reduction program or for early compliance, then multiply the result in subparagraph (M) of this paragraph by 0.95, which is (1 - 0.05). The maximum reduction that a site's compliance history may be reduced through voluntary pollution reduction programs in this subparagraph is 0.85, which is (1 - 0.15). If site participates in both EMS and voluntary pollution reduction programs then the maximum reduction that a site's compliance history may be reduced through EMS and voluntary programs in this subparagraph is 0.75, which is (1 - 0.10 - 0.15).

(2) Point ranges. The executive director shall assign the site a classification based upon the compliance history and application of the formula in paragraph (1) of this subsection to determine a site rating, utilizing the following site rating ranges for each classification:

(A) For entities with less than 15 complexity points:

(i) [~~(A)~~] fewer than 0.10 points--high performer;

(ii) 0.10 points to 60 points--satisfactory performer; and

(iii) more than 60 points--unsatisfactory performer.

(B) For entities with 15 or more complexity points:

(i) fewer than 0.10 points--high performer;

(ii) [~~(B)~~] 0.10 points to 55 points--satisfactory performer; and

(iii) [~~(C)~~] more than 55 points--unsatisfactory performer.

(3) Mitigating factors. The executive director shall evaluate mitigating factors for a site classified as an unsatisfactory performer.

(A) The executive director may reclassify the site from unsatisfactory to satisfactory performer [~~with 55 points~~] based upon the following mitigating factors:

(i) other compliance history components included in §60.1(c)(10) - (12) of this title;

(ii) implementation of an EMS not certified under Chapter 90 of this title at a site for more than one year;

(iii) a person, all of whose other sites have a high or satisfactory performer classification, purchased a site with an unsatisfactory performer classification or became permitted to operate a site with an unsatisfactory performer classification if the person entered into a compliance agreement with the executive director regarding actions to be taken to bring the site into compliance prior to the effective date of this rule; and

(iv) voluntarily reporting a violation to the executive director that is not otherwise required to be reported and that is not reported under the Audit Act, or that is reported under the Audit Act but is not granted immunity from an administrative or civil penalty for that violation(s) by the agency.

(B) When a person, all of whose other sites have a high or satisfactory performer classification, purchased a site with an unsatisfactory performer classification or became permitted to operate a site with an unsatisfactory performer classification and the person contemporaneously entered into a compliance agreement with the executive director regarding actions to be taken to bring the site into compliance, the executive director:

(i) shall reclassify the site from unsatisfactory performer to satisfactory performer [~~with 55 points~~] until such time as the next annual compliance history classification is performed; and

(ii) may, at the time of subsequent compliance history classifications, reclassify the site from unsatisfactory performer to satisfactory performer [~~with 55 points~~] based upon the executive director's evaluation of the person's compliance with the terms of the compliance agreement.

(h) Person classification. The executive director shall assign a classification to a person by adding the complexity weighted site ratings of all the sites owned and/or operated by that person in the State of Texas. Each site that a person is affiliated to will receive a point value

based on the compliance history rating at the site multiplied by the percentage of complexity points that site represents of the person's total complexity points for all sites. Each of these calculated amounts will be added together to determine the person's compliance history rating.

(i) Notice of classifications. Notice of person and site classifications shall be posted on the commission's website after 30 days from the completion of the classification. The notice of classification shall undergo a quality assurance, quality control review period. An owner or operator of a site may review the pending compliance history rating upon request by registering for the Advanced Review of Compliance History. [~~submitting a Compliance History Review Form to the commission by August 15 each year.~~]

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502364
Gitanjali Yadav
Deputy Director, Litigation Division
Texas Commission on Environmental Quality
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 239-2678

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CHAPTER 115. CONTROL OF AIR POLLUTION FROM VOLATILE ORGANIC COMPOUNDS

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes new §§115.260, 115.262, 115.264, 115.265, 115.266, and 115.269; and amended §§115.111, 115.112, 115.119, 115.122, 115.129, 115.411, 115.412, 115.415, 115.416, 115.419, 115.420, 115.421, 15.425, 115.427, 115.429, 115.440, 115.441, 115.449, 115.450, 115.451, 115.453, 115.455, 115.458-115.461, 115.463, 115.465, 115.468, and 115.469.

If adopted, these rules would be submitted to the U.S. Environmental Protection Agency (EPA) as a state implementation plan (SIP) revision.

Background and Summary of the Factual Basis for the Proposed Rules

On June 20, 2024, EPA published the reclassification of the Bexar County area, consisting of Bexar County, from moderate to serious nonattainment for the 2015 eight-hour ozone National Ambient Air Quality Standard (NAAQS) of 0.070 parts per million (ppm), effective July 22, 2024 (89 *Federal Register* (FR) 51829). The deadline for the Bexar County area to achieve attainment under the serious classification is September 24, 2027, with a 2026 attainment year. Federal Clean Air Act (FCAA), §182(b)(2) requires the commission to implement reasonably available control technology (RACT) provisions for all major sources of nitrogen oxides (NO_x) and volatile organic compounds (VOC) in the Bexar County area. FCAA, §172(c) and §182(c) require the commission to submit serious classification attainment demonstration (AD) and reasonable further progress (RFP) SIP revisions to EPA. The required serious classification SIP revisions (Non-Rule Project Nos. 2024-040-SIP-NR and 2024-041-SIP-NR), along with the two concurrently proposed rulemakings (Rule Project Nos. 2025-006-115-AI and 2025-007-117-AI) needed for implementation of required NO_x and VOC control measures, are due to EPA by January 1, 2026. This proposed rulemaking would address FCAA RACT requirements for major sources of VOC in the Bexar County area under the serious classification for the 2015 eight-hour ozone NAAQS. The proposed rulemaking also contains rule revisions to achieve sufficient VOC emissions reductions to demonstrate that the Bexar County area is making progress towards attainment and would achieve the mandated RFP reduction target for VOC.

In the Bexar County area, the emission profile presents unique challenges for reduction efforts. The county's VOC emissions are predominantly generated by nonpoint area sources, which constitute over 70% of the total emissions inventory (EI). In contrast, RACT is typically applied to point sources, which are fewer in number in Bexar County and contribute a relatively small fraction of overall VOC emissions. Nonpoint area sources offer the greatest potential for achieving significant VOC reductions in the Bexar County area. Accordingly, control strategies used to meet the RFP VOC emissions reduction requirement in this proposed rulemaking emphasize controlling area sources.

Attainment Demonstration Rulemaking Requirements

FCAA, §172(c) mandates that the commission submit an AD SIP revision to demonstrate that the Bexar County area will meet the NAAQS by its attainment date. Photochemical modeling for future years indicates that the Bexar County area will meet the 2015 ozone NAAQS by the mandated deadline using existing control strategies. The commission is neither required to propose nor is it proposing any rulemaking amendments to demonstrate attainment for the Bexar County area in this rulemaking because the modeling demonstrates attainment without the need for additional measures. A reasonably available control measures (RACM) analysis to identify additional potential control measures that could expedite attainment of the NAAQS earlier than the area's attainment date is provided in the concurrently proposed Bexar County 2015 Ozone NAAQS Serious AD SIP Revision (Non-Rule Project No. 2024-041-SIP-NR). The RACM analysis determined that no potential control measures met the criteria to be considered RACM. As a result, no rule revisions are proposed as RACM.

RACT Implementation Requirements

FCAA, §182(b)(2) requires the commission to implement RACT provisions for all major sources of VOC in the Bexar County area. EPA defines RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761, September 17, 1979). RACT requirements for moderate and higher classification ozone nonattainment areas are included in the FCAA to ensure that significant source categories at major sources of ozone precursor emissions are controlled to a reasonable extent, but not necessarily to best available control technology levels expected of new sources or to maximum achievable control technology levels required for major sources of hazardous air pollutants. Although the FCAA requires the state to implement RACT, EPA guidance provides states with the flexibility to determine the most technologically and economically feasible RACT requirements for a nonattainment area. This rulemaking proposes to implement RACT requirements for the Bexar County serious nonattainment area, targeting sources that emit 50 tons per year (tpy) or more of VOCs. The proposed rules would specifically apply to offset lithographic printing operations, bakery ovens, and VOC storage tanks. While the proposed RACT rules are intended to

fulfill SIP obligations resulting from the Bexar County area's reclassification from moderate to serious nonattainment, the rules are not expected to yield further reductions in VOC emissions. This is because RACT measures for moderate nonattainment are in effect in the area and already address all known point source emission sites. Since most non-mobile VOC emissions in the Bexar County area originate from nonpoint area sources in sectors associated with solvent utilization, such as smaller surface coating operations, RACT control strategies for major sources in this proposed rulemaking may have reduced impact and limited effectiveness. The proposed compliance date for these changes, March 1, 2026, is the start of the ozone season in Bexar County for the serious classification attainment year.

RFP Reduction Requirements

FCAA, §182(b)(1) requires the commission to demonstrate that the Bexar County area will achieve at least a 15% VOC emission reduction (15.85 tons per day (tpd)) from the 2017 baseline year. The concurrently proposed Bexar County 2015 Ozone NAAQS Serious RFP SIP Revision (Non-Rule Project No. 2024-040-SIP-NR) demonstrates that the Bexar County area will satisfy the 15% reduction requirement by using a combination of recently implemented measures and new rule changes. Recently implemented measures (Bexar County area moderate RACT Rules, Rule Project No. 2023-116-115-AI, adopted April 24, 2024) will achieve 3.75 tpd in VOC reductions. New rule changes in this proposed Bexar County area rulemaking are expected to achieve 12.13 tpd in VOC reductions. Collectively, these measures slightly exceed the 15% VOC RFP reduction requirement of 15.85 tpd. The proposed rule changes encompass several sections of Chapter 115. First, amendments are proposed to existing rules for degreasing processes within Subchapter E, Division 1 and are anticipated to result in 0.49 tpd of VOC emission reductions in the Bexar County area. Second, proposed revisions for fabric coating provisions outlined in Subchapter E, Division 2 are expected to result in 1.06 tpd of VOC emission reductions in the Bexar County area. Third, proposed revisions to coating of metal parts and products, architectural coatings, and industrial maintenance coatings provisions in Subchapter E, Division 5 are expected to result in 8.46 tpd of VOC emission reductions; along with revisions to industrial cleaning solvent provisions in Subchapter E, Division 6, which would result in 1.48 tpd of VOC emission reductions. Finally, proposed new rules in Subchapter C, Division 6, for gasoline dispensing nozzles and low permeation hoses from motor vehicle fuel dispensing facilities would result in an estimated 0.64 tpd in VOC emission reductions in the Bexar County area. The proposed compliance date for all these changes, March 1, 2026, is the start of the ozone season in Bexar County for the serious classification attainment year.

Section by Section Discussion

The commission proposes grammatical, stylistic, and other non-substantive changes to update the rules in accordance with current *Texas Register* style and format requirements, improve readability, establish consistency in the rules, and conform to the standards in the Texas Legislative Council Drafting Manual, September 2020. These non-substantive changes are not intended to alter the existing rule requirements in any way and are not specifically discussed in this preamble.

Among these non-substantive changes is removal of version identifiers for certain tests developed by the American Society of Testing and Materials (ASTM) in Subchapter E, Divisions 1, 2, and 5. Removal of the specific revision version will reference all test methods in these rule sections consistently. Sections affected by this change include §§115.415(1)(a), 115.420(c)(11)(S), 115.425(1)(B), 115.450(c)(9)(C) and (F), and 115.455(a)(1)(B).

SUBCHAPTER B: GENERAL VOLATILE ORGANIC COMPOUND SOURCES

DIVISION 1: STORAGE OF VOLATILE ORGANIC COMPOUNDS

Revisions in this division are proposed to fulfill major source RACT requirements.

§115.111. Exemptions

The commission proposes to establish exemption criteria in new §115.111(a)(17) for storage tanks and tank batteries storing condensate prior to custody transfer in Bexar County. To qualify for exemption from flashed gas control requirements, a storage tank or tank battery storing condensate must have a condensate throughput greater than 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis, and owners or operators must be able to show, by the test methods specified, that uncontrolled VOC emissions are less than 50 tpy for individual tanks or aggregated tank batteries. This 50 tpy threshold aligns with the VOC RACT control requirements for major sources in Bexar County and effectively narrows the scope of tanks eligible for exemption to those with even lower emissions than what was allowed at the previous 100 tpy threshold. The exemption would become available beginning March 1, 2026. The commission proposes to remove a typographical error in language from §115.111(a)(15) that inadvertently repeated rule language.

§115.112. Control Requirements

The commission proposes to amend control requirements in §115.112(e)(4)(E) to clarify that fixed roof tanks in the Bexar County area storing condensate prior to custody transfer must continue to control flashed gases if the tank's throughput is greater than 6,000 barrels a year through February 28, 2026. This is considered equivalent to a 100 tpy VOC emission rate or greater. Beginning March 1, 2026, proposed control requirements in new §115.112(e)(5)(F) specify that owners or operators of fixed roof tanks storing condensate prior to custody transfer or at a pipeline breakout station must control flashed gases for tanks with VOC emissions greater than 50 tpy. The commission proposes to amend §115.112(e)(5)(E) to require that tanks at a tank battery or pipeline breakout station must route flashed gases to a vapor control system if they emit 50 or more tons of uncontrolled VOCs annually, rather than the previous threshold of 100 tons. This 50 tpy threshold aligns with the new VOC RACT major source limit.

§115.119. Compliance Schedules

The commission proposes to revise §115.119(g) to establish March 1, 2026, as the compliance date by which owners or operators of fixed roof storage tanks in the Bexar County area that store condensate prior to custody transfer must comply with the new requirements of §115.112(e)(4)(F) and §115.112(e)(5)(E) to control flashed gases.

DIVISION 2: VENT GAS CONTROL

Revisions in this division are proposed to fulfill major source RACT requirements.

§115.122 Control Requirements

The commission proposes to revise the rule text in §115.122(a)(3)(E) to require emission control requirements from vent gas from bakeries in the Bexar County area by lowering the applicability threshold from 100 tpy to 50 tpy for major source controls. Bakeries that emit 50 tpy or more of VOC emissions would be required to achieve an 80% reduction in VOC emissions through vent gas control from affected bakery ovens. By lowering the emission threshold and implementing stricter control requirements, this proposed rule revision seeks to address the area's ozone nonattainment classification of serious as well as ensure compliance with FCAA mandates for RACT implementation in Bexar County. Owners or operators of affected vent gas streams located in the Bexar County area must comply with the emission specifications in the subsection beginning March 1, 2026, the compliance date specified in proposed new §115.129(h).

The commission proposes revisions to §115.122(a)(3)(F)(iv), to prevent bakeries from claiming emission credits if they make emission reductions in the range of 30% to 90% associated with controlling VOC emissions from bakery oven vent gases in the Bexar County area. The current rule already prevents owners or operators in Bexar County with uncontrolled VOC emissions of 100 tpy or more from claiming emission credits under Chapter 101, Subchapter H, Division 1 to prevent double counting of reductions for the purposes of the SIP. This prohibition would apply for bakeries emitting VOC at the new, lower threshold of 50 tpy necessary for RACT implementation, beginning March 1, 2026.

§115.129 Counties and Compliance Schedules

The commission proposes to add new §115.129(h) to establish a compliance deadline of March 1, 2026, by which affected bakeries in the Bexar County area must meet updated RACT requirements for 90% vent gas controls from bakery ovens. Establishing this compliance date would ensure that RACT requirements are implemented as expeditiously as practicable and would also allow newly affected bakeries sufficient time to comply before the beginning of ozone season in the attainment year for the area.

SUBCHAPTER C: VOLATILE ORGANIC COMPOUND TRANSFER OPERATIONS

DIVISION 6: GASOLINE DISPENSING FACILITIES

Revisions in this division are proposed to result in VOC reductions necessary to meet RFP requirements.

The commission proposes to add a new Subchapter C, Division 6 to minimize Bexar County area gasoline dispensing facility (GDF) VOC spillage and associated gasoline transfer emissions from storage tanks into vehicles and containers. GDF sources would need to comply with the control requirements specified in §115.262, which include the installation of enhanced conventional (ECO) nozzles and low permeation hoses on gasoline dispensing pumps. Proposed Division 6 would also contain new sections with provisions for gasoline dispensing facility applicability and definitions, monitoring and inspection, testing and certification, recordkeeping, and compliance requirements.

Affected Bexar County area gasoline dispensing facilities would need to comply by March 1, 2026. Bexar County area gasoline dispensing facility equipment that becomes subject to Division 6 after March 1, 2026, would have 60 days to comply with its requirements.

§115.260 Applicability and Definitions

The commission proposes new §115.260 to establish new GDF rules and corresponding definitions in the Bexar County area. The rules only apply to gasoline dispenser equipment and not equipment that dispenses diesel or other fuels. Newly proposed §115.260 provisions are intended to assist owners and operators in identifying Division 6 applicability and clarifying regulatory definitions. Proposed §115.260(b) defines a GDF as one that includes retail, private, and commercial gasoline dispensing operations. It defines malfunctioning equipment as equipment that is not operating according to the manufacturer's design and specifications and requires remedial action to eliminate potential gasoline leakage. Proposed §115.260(b) also includes definitions for gasoline dispenser, conventional nozzle, ECO nozzle, low permeation hose, and gasoline dispensing spillage. Informing owners, operators, commission staff, and the public of the new §115.260 terminology would reduce confusion and inconsistent interpretations, which are crucial for compliance and enforcement.

§115.262 Control Requirements

The commission proposes new section §115.262 that would require ECO nozzle and low permeation hose controls on gasoline dispensing pumps in the Bexar County area. Only California Air Resources Board (CARB)-certified ECO nozzles and low permeation hoses that satisfy the proposed control requirements in §115.262 for reduced gasoline dispensing nozzle and reduced dispensing hose permeation rate gasoline emissions would be allowed. Retrofitting gasoline dispensing pumps with ECO nozzles and low permeation hoses required by proposed §115.262 reduces fuel drips or spills and vapor permeation, thereby significantly reducing VOC emissions from hundreds of GDFs in the county. Existing gasoline dispensing pumps would have until March 1, 2026, to install these items. Newly built gasoline dispensing pumps installed after March 1, 2026, would be required to install these items as soon as practicable and within 60 days of the pump's installation. Similar to other regulations, the commission would allow a 60-day period for new sites to come into compliance while anticipating that owners or operators of new sites will install the required hardware upon opening.

The commission also proposes work practice requirements in proposed §115.262. By implementing and enforcing spill prevention procedures, training, spill clean-up and other work practice requirements, GDFs can significantly minimize spills and associated VOC emissions. Proposed new §115.262 would require malfunctioning equipment to be repaired as soon as possible and before the next monthly inspection. The proposed regulation would require a GDF owner or operator to establish a policy to prohibit vehicle top-offs, require covers on open gasoline containers, mandate signs to inform customers and employees of proper filling practices and require spills to be cleaned up as soon as possible.

§115.264 Monitoring and Inspection Requirements

The commission proposes new §115.264 to establish monthly gasoline dispensing system monitoring and inspection requirements to identify leaking or malfunctioning equipment and facilitate timely repairs. ECO nozzles, low permeation hoses, and associated gasoline dispenser equipment would be inspected to ensure they were operating as intended and did not contain holes or tears that could allow gasoline leakage. The 0.64 tpd VOC emission reductions expected to be achieved from compliance with §115.264 requirements necessitates that GDF equipment remains in good condition, meets certification standards, and remains compliant with new rule requirements.

§115.265 Testing and Certification Requirements

The commission proposes new §115.265 to establish testing and certification provisions for the ECO nozzles and low permeation hoses that would be required at the affected gasoline dispensing facilities by proposed §115.262. Proposed §115.265 would require the use of UL 330 (7th ed) - Underwriters Laboratories' Standard for Hose and Hose Assemblies for Dispensing Flammable Liquids test methods to determine compliance with the proposed §115.262(a)(1) low permeation hose maximum permeation limit of 10.0 grams per square meters per day. ECO nozzles required to be installed by proposed §115.262(a)(3) would need to meet certification and test requirements in the California Air Resources Board Certification Procedure for Enhanced Conventional Nozzles and Low Permeation Conventional Hoses for Use at Gasoline Dispensing Facilities CP-207, dated July 12, 2021, including updates and revisions.

§115.266 Recordkeeping

The commission proposes new section §115.266 recordkeeping requirements to document compliance with newly proposed Chapter 115, Subchapter C, Division 6 rules. Proposed §115.266 would require owners and operators to keep GDF equipment monthly inspection records that include the inspector's name and inspection date; component inspected; inspection result and any corrective action; and the date corrective action was completed. GDFs would need to keep records of low permeation hose and ECO nozzle certifications as well as training records, described in §115.262(b)(6). The compliance records would need to be kept in a readily accessible format for a minimum of five years. Proposed §115.266 recordkeeping would include inspection, testing, certification, maintenance activity, and training documentation to confirm compliance with these rules. Tracking these activities documents compliance with the newly proposed Subchapter C, Division 6 rules.

§115.269 Compliance Schedules

The commission proposes a compliance deadline of March 1, 2026, for Bexar County area GDF equipment that meets applicability requirements on or before this initial compliance date. Bexar County area GDF equipment that becomes subject to Division 6 after the proposed March 1, 2026, compliance date would have 60 days after becoming subject to comply with its requirements. By establishing separate compliance dates in §115.269 for existing GDF equipment and similar components that may be installed in the future, the commission can ensure fair and consistent application of emission control requirements across all the intended sources, including newly constructed ones.

SUBCHAPTER E: SOLVENT-USING PROCESSES

DIVISION 1: DEGREASING PROCESSES

Revisions in this division are proposed to generate VOC reductions for RFP requirements.

§115.411 Exemptions

The commission proposes to revise §115.411(a) to remove the Bexar County area's applicability to exemptions currently available to degreasing operations under that subsection. On March 1, 2026, degreasing operations in Bexar County subject to §115.412(d) would no longer be eligible for exemptions under §115.411(a). This proposed amendment ensures that all degreasing operations, regardless of previous exemption status, adhere to lower VOC content limits. The commission proposes a new subsection, §115.411(c), with exemptions that would apply in the Bexar County area beginning March 1, 2026. Proposed new subsection §115.411(c) mirrors exemptions in current §115.411(b) for the Dallas-Fort Worth (DFW) and Houston-Galveston-Brazoria (HGB) areas, which would allow implementation of the same lower degreasing solvent VOC content limit in the Bexar County area.

§115.412 Control Requirements

The commission proposes to add a new subsection (d) to the control requirements in §115.412 to address VOC emissions from degreasing processes in the Bexar County area. This new subsection would establish specific VOC content limits for solvents used in cold solvent cleaning, open-top vapor degreasing, and conveyorized degreasing processes where there previously were none. The new degreasing limits require the use of solvents with a VOC content of no more than 25 grams/liter. The same limit is used as a contingency measure in the DFW and HGB areas in §§115.412(b) and (c), respectively, and it is necessary to implement in the Bexar County area to help achieve the VOC emissions reductions necessary for RFP requirements.

§115.415 Testing Requirements

The commission proposes to amend §115.415(3) to implement compliance testing requirements for the degreasing operations in the Bexar County area subject to §115.412(d). Under the existing rule, degreasing solvent VOC content limits are listed for the DFW and HGB areas in §115.412(b) and (c), respectively. The proposed inclusion of new §115.412(d) under §115.415(3) would specify the test method to determine VOC content for degreasing operations in the Bexar County area, bringing the requirements in line with other nonattainment areas. Accurate compliance testing, as outlined in methods specified in §115.415(3), is crucial for verifying that VOC limits are met so that intended VOC emission reduction targets are achieved from the implemented measures.

§115.416 Recordkeeping Requirements

The commission proposes new §115.416(5) to require degreasing operation facilities in the Bexar County area to maintain sufficient records to demonstrate compliance with the VOC content limits in §115.412(d) and applicable exemptions in §115.411.

§115.419 Counties and Compliance Schedules

The commission proposes to revise the compliance schedule in subsection §115.419(h) for degreasing operations to reflect new requirements. The schedule mandates that facilities subject to the provisions of proposed §115.412(d) in the Bexar County area comply with the updated control requirements by no later than March 1, 2026. This schedule provides facilities with sufficient time to adopt the necessary control measures and make operational adjustments while ensuring that the required VOC emission reductions needed from degreasing operations are achieved in a timely manner. In addition, the commission proposes a revision to §115.419(h) to remove a typographical error ‘by but' that was a remnant of the prior rulemaking and remove ‘Bexar' from the list of counties in §115.419(a). The commission should have deleted this in the prior rulemaking when existing §115.419(h) was added. Deleting it now provides a clear description of compliance requirements.

DIVISION 2: SURFACE COATING PROCESSES

Revisions in this division are proposed to generate VOC reductions for RFP requirements.

§115.420 Applicability and Definitions

The commission proposes to add the descriptor "Applicability" at the beginning of §115.420(a) to improve consistency with subsequent subsections §115.420(b) and §115.420(c) and parallel sections in other divisions of Chapter 115. The commission also proposes to add definitions under new §115.420(c)(4)(A) through §115.420(c)(4)(C) for "plasticizer, " "plastisol, " and "wash primer. " These new definitions would provide examples of fabric coatings that may be applied to protect or add new properties to a fabric substrate. The materials listed in §115.420(c)(4)(A) through §115.250(c)(4)(C), would help owners and operators, commission staff, and the public better understand what qualifies as a "fabric coating, "ensuring more consistent application, compliance, and enforcement of the rules. The commission proposes to update the reference in §115.420(c)(11)(S) from the outdated "Regulatory Guide 1.54" issued by the U.S. Atomic Energy Commission in June 1973 to the current Revision 3 of the guide, which was published in April 2017. The updated guide reflects the most recent requirements for protective coatings for nuclear power plants.

§115.421 Emission Specifications

The commission proposes to create new subparagraphs under existing §115.421(5) to differentiate proposed new requirements for fabric coating processes in the Bexar County area from existing requirements for other areas. Proposed subparagraph (A) would stipulate the existing requirements and areas subject to them, and proposed subparagraph (B) would require owners and operators of fabric coating processes in the Bexar County area to use coatings and wash primers containing 265 g/l (minus water and exempt solvent), which is a decrease from the existing limit of 350 g/l. The counties and areas listed under §115.421(5)(A), including Bexar County, would remain subject to the requirements in existing §115.421(5). Beginning March 1, 2026, the Bexar County area would then be subject to limits specified in §115.421(5)(B). Proposed new clauses §115.421(5)(B)(i) and §115.421(5)(B)(ii) would set limits for fabric coatings and wash primers at 265 g/l and for plastisol fabric coatings at 20 g/l (less water and exempt solvent), as applied at fabric coating operations in the Bexar County area. These proposed limits are based on South Coast Air Quality Management District (SCAQMD) Rule 1128, adopted on March 8, 1996, and approved by EPA on May 4, 1999, as documented in *Federal Register* at 64 FR 23774. The limits are proposed based on their potential to achieve greater VOC emission reductions from fabric coating operations. These reductions are necessary to meet RFP requirements in the Bexar County area.

§115.425 Testing Requirements

The commission proposes to make non-substantive changes to §115.425(1)(B) to remove version identifiers for certain tests developed by the American Society of Testing and Materials (ASTM). Removal of the specific revision version would reference all test methods in these rule sections consistently.

§115.427 Exemptions

Proposed new §115.427(3)(K) and amended §115.427(6) remove exemptions from rule requirements for low emitting fabric coating operations and aerosol coatings (spray paint), respectively, within the Bexar County area. Beginning March 1, 2026, owners or operators would be required to comply with the applicable emission specifications in §115.421 for fabric coatings. Proposed new §115.427(3)(K) and amended §115.427(6) exemptions allow for a wider range of VOC sources to be controlled to ensure that more fabric coating sources adhere to lower VOC content limits. The VOC reductions from these additional sources are necessary to help the Bexar County area meet RFP requirements. The commission also proposes to remove text in §115.427(3) in an example that references exemptions for architectural coatings. The proposed changes are intended to prevent confusion and to mirror text from a similar example in existing §115.451.

§115.429 Counties and Compliance Schedules

The commission proposes several changes in §115.429 to establish a binding deadline by which owners and operators of affected fabric coating operations must comply with particular rule provisions. Proposed amendments to §115.429(e) aim to clarify that compliance with fabric coating requirements of the division are required by the compliance date or within 60 days after becoming subject to the rule, if the compliance date has passed. The commission proposes adding new subsection §115.429(g) to establish compliance with the new fabric coating requirement in §115.421(5)(B) by March 1, 2026. The proposed amendment to §115.429(f) indicates that fabric coating operations in the Bexar County area currently subject to this division do not have to comply with the new requirement set in §115.421(5)(B) until the compliance date set in newly proposed §115.429(g).

DIVISION 4: OFFSET LITHOGRAPHIC PRINTING

Revisions in this division are proposed to fulfill major source RACT requirements and to generate VOC reductions for RFP requirements.

§115.440 Applicability and Definitions

The commission proposes to lower the major source threshold for offset lithographic facilities in the Bexar County area to comply with FCAA §§182(b)(2) and 182(f) RACT requirements. The definitions in subparagraphs §115.440(b)(8)(D) and §115.440(b)(9)(D) for both major and minor printing sources would be amended. In the existing rules, offset lithographic facilities in the Bexar County area with uncontrolled VOC emissions of 100 tpy are classified as major sources, while those below this threshold are considered minor. The proposed amendments would reduce the major source threshold to 50 tpy beginning March 1, 2026, for the Bexar County area. The definition for minor source would be revised similarly for the Bexar County area. Amendments to §115.440(b)(8)(D) and §115.440(b)(9)(D) would subject offset lithographic facilities to RACT requirements at lower thresholds of VOC and would ensure RACT requirements are implemented as required for offset lithographic printing facilities in the Bexar County area.

§115.441 Exemptions

The commission proposes changes to §115.441(b)(1) regarding the exemption for cleaning solutions used in offset lithographic printing operations in Bexar County for minor printing sources. In the existing rules, minor printing sources may exempt up to 110 gallons of cleaning solution per year from the VOC content limits in §115.442(c)(1). The proposed revision would remove this exemption for Bexar County beginning March 1, 2026. Removing the §115.441(b)(1) exemption for minor printing sources in Bexar County ensures that minor printing sources, regardless of previous exemption status, adhere to the lower VOC content limits proposed in Subchapter E, Division 6. The change is necessary to achieve the calculated VOC reductions associated with the proposed changes in Subchapter E, Division 6, which are

necessary for RFP purposes in Bexar County. This change only affects sources in Bexar County, not the DFW or HGB areas.

§115.449 Compliance Schedules

The commission proposes to add rule text in §115.449(j) to establish a compliance deadline of March 1, 2026, by which date, affected facilities in the Bexar County area must adhere to RACT requirements and comply with low VOC content limits for offset lithographic operations.

DIVISION 5: CONTROL REQUIREMENTS FOR SURFACE COATING PROCESSES

Revisions in this division are proposed to generate VOC reductions for RFP requirements.

§115.450 Applicability and Definitions

The commission proposes to broaden the scope of surface coating operations subject to Subchapter E, Division 5 rules in the Bexar County area by adding architectural coatings to the list of applicable surface coating processes in §115.450(a). Language would be added to clarify that the rule applies only to architectural coatings in a commercial context and would explicitly exclude consumer use from applicability by stating that the rule applies to coatings applied for compensation. The commission proposes to add relevant architectural coating related definitions to §115.450 to accompany the architectural coatings VOC content limits that are proposed in §115.453. To ensure that all definitions in §115.450 remain in alphabetical order when new definitions are added, existing definitions would be reordered and renumbered accordingly.

The commission proposes to add §115.450(a)(9) and §115.450(a)(10) to extend the requirements in Subchapter E, Division 5 to architectural coatings and industrial maintenance coatings in the Bexar County area.

The commission proposes new §115.450(c)(11), which would provide definitions for different types of architectural coatings with VOC limits proposed in §115.453(a)(5). These proposed definitions are based on South Coast Air Quality Management District (SCAQMD) Rule 1113, amended on February 5, 2016, and approved by EPA on December 31, 2018, as documented in *Federal Register* at 40 CFR Part 52. The added definitions include aluminum roof coatings, appurtenance, below ground wood preservatives, bituminous coating materials, bituminous roof primers, bond breakers, building envelope, building envelope coatings, colorant, concrete-curing compounds, concrete surface retarders, default coatings, driveway sealers, dry-fog coatings, faux finishing coatings, clear topcoats, decorative coatings, glazes, japans, trowel applied coatings, fire-resistive coatings, flat coatings, form release compounds, gonioapparent, graphic arts coatings, interior stains, lacquers, low-solids coatings, magnesite cement coatings, mastic coating, metallic pigmented coatings, multi-color coatings, nonflat coatings, pearlescent, pigmented, post-consumer coatings, pre-treatment wash primers, primers, reactive penetrating sealers, recycled coatings, restoration architect, roof coatings, rust preventative coatings, sacrificial anti-graffiti coatings, sanding sealers, sealers, shellacs, specialty primers, stains, stationary structures, stone consolidants, swimming pool coatings, tile and stone sealers, topcoat, tub and tile refinishing coatings, undercoaters, varnishes, waterproofing sealers, wood coatings, wood conditioners, and wood preservatives. Many of these coating variants have their own separate VOC limits in §115.453(a)(5). By providing definitions in this section, owners and operators can more easily find the appropriate VOC limit for the product they are using.

§115.451 Exemptions

The commission proposes new §115.451(a)(6) to indicate that exemptions currently provided in §115.451(a)(1)-(3) for low-emission architectural coating operations, industrial maintenance coating operations, and metal parts and products coating operations would no longer apply in the Bexar County area beginning March 1, 2026. As of that date, owners or operators would be required to comply with applicable control requirements of §115.453. These changes are necessary to achieve all the calculated VOC reductions for RFP purposes in Bexar County.

The commission proposes to create exemptions in new subsection §115.451(q) for owners or operators of architectural coating operations in the Bexar County area. This new subsection identifies specific architectural coatings by type and size that would be exempt from the VOC limits in §115.453(a)(1)(C) and (D). Exemptions would apply to emulsion type bituminous pavement sealers (regardless of container size) under the newly proposed §115.451(q)(1); specific architectural coatings in containers of one liter or less are outlined in §115.451(q)(2)(A); and specific architectural coatings in containers of eight fluid ounces or less, or those used solely for touch-up are outlined in §115.451(q)(2)(B). Small containers of coatings, which are assumed to be used to cover small areas, contribute minimally to overall VOC emissions compared to larger containers. These exemptions mirror those in SCAQMD Rule 1113 and are necessary to achieve all the calculated VOC reductions for RFP purposes.

§115.453 Control Requirements

The commission proposes to restructure existing §115.453(a)(1)(C) VOC content limit provisions for miscellaneous metal parts and products. The existing limits apply in the Bexar, DFW, and HGB areas, and new limits would be added for the Bexar County area. The existing provisions would be relocated under §115.453(a)(1)(C)(i), and would continue to apply in Bexar County until February 28, 2026. Compliance with proposed new §115.453(a)(1)(C)(ii) would be required beginning March 1, 2026, in the Bexar County area. Existing provisions for the Bexar, DFW, and HGB areas would be relocated, without changes, from existing Figure: 30 TAC §115.453(a)(1)(C) to proposed new Figure: 30 TAC §115.453(a)(1)(C)(i). Separate provisions applicable only in the Bexar County area would be added under new Figure: 30 TAC §115.453(a)(1)(C)(ii). The proposed VOC content limits in subparagraph §115.453(a)(1)(C)(ii) for the Bexar County area aim to reduce emissions from coatings used in metal parts and products operations in the Bexar County area. Existing Table 2 under Figure: 30 TAC §115.453(a)(1)(C) specifying the VOC content as "pounds of volatile organic compounds per gallon of solids" will not be included for Bexar County provisions because the limits in the existing Table 2 are considered equivalent to existing Table 1, and because coating manufacturers typically do not specify VOC content in this manner on their documentation.

The proposed new Bexar County provisions would establish VOC content limits mirroring the limits in DFW and HGB, except for several coating categories as follows: one-component prefabricated architectural coatings (air-dried) VOC content limit would be 2.3 lbs/gal; multi-component prefabricated architectural coatings (air-dried) VOC content limit would be 2.8

lbs/gal; high-performance architectural coatings (air-dried) VOC content limit 3.5 lbs/gal; high-performance architectural coatings (baked) VOC content limit would 3.5 lbs/gal; extreme high-gloss coatings (air-dried) VOC content limit would be 2.8 lbs/gal; and one-component general coatings (air-dried) VOC content limit would be 2.3 lbs/gal. The proposed metal parts and products coatings VOC content limits, in lbs/gal coating, are based on the SCAQMD Rule 1107, adopted on January 6, 2006, and approved by EPA on November 24, 2008, as documented in the *Federal Register* (73 FR 70883). This rule has been successfully used in California to reduce VOC emissions from metal parts and products, and emissions reductions achieved based on these limits in Bexar County are necessary to meet RFP requirements.

The commission proposes to add new VOC content limits for architectural coatings in the Bexar County area. The new VOC content limits are currently used in other states. The new limits are listed in proposed renumbered §115.453(a)(5). Emissions reductions achieved based on these limits in Bexar County are necessary to meet RFP requirements The commission currently has no VOC content limits for architectural coatings in the Bexar County area or other areas of Texas. Three new tables would be created in §115.453(a)(5) that would list VOC content limits for various categories of architectural coatings, including bond breakers, building envelope coatings, concrete-curing compounds for roadways and bridges, concrete surface retarder, default coatings, driveway sealer, dry-fog coatings, faux finishing coatings, fire-resistive coatings, flat and nonflat coatings, floor coatings, form release compound, graphic arts (sign) coatings, magnesite cement coatings, mastic coatings, metallic pigmented coatings, multi-color coatings, pre-treatment wash primers, primers, sealers, and undercoaters, reactive penetrating sealers, recycled coatings, roof coatings, bituminous roof primers, rust preventative coatings, sacrificial, anti-graffiti coatings, shellacs, specialty primers, stains, stone consolidants, swimming pool coatings, tile and stone sealers, tub and tile refinishing coatings, waterproofing concrete/masonry sealers, wood coatings, conditioners, and preservatives, low-solids coatings, and certain colorants added to architectural coatings. Compliance would be achieved through the application of low VOC coatings. Applicable requirements for coating systems outlined in existing §115.453(c) and applicable work practice requirements detailed in existing §115.453(d) would apply and are not proposed for revision. The provision and equation in existing §115.453(a)(5) would be renumbered as §115.453(a)(6), with no additional proposed changes.

The commission proposes to add new subsection §115.453(j) to implement control measures for industrial maintenance coatings in the Bexar County area. The new §115.453(j) industrial maintenance coatings control requirement would set a VOC content limit of 2.1 lbs/gal or 250 (g/l) of coating, excluding water and exempt solvents to be met by applying low-VOC coatings. The limits of 2.1 lbs/gal and 250 g/l are considered equivalent. There is currently no VOC content limit control requirement for industrial maintenance coatings in the Bexar County area. This measure would establish control requirements for industrial maintenance coatings in the Bexar County area similar to contingency measures that exist in §115.453(f) and §115.453(g) for the DFW and HGB areas, respectively. This measure is necessary in the Bexar County area to meet RFP requirements.

§115.455 Approved Test Methods and Testing Requirements

The commission proposes to update approved test methods and testing requirements in §115.455 for architectural coating operations in the Bexar County area. Inclusion of these updates in the proposed rule is necessary because new architectural coatings definitions make references to them. The commission proposes to add American National Standards Institute (ANSI) A137.1 Standard Specifications for Ceramic Tiles, a test method for applicable tile and stone penetrative sealers, and is referenced in proposed §115.450(c)(11)(VV)(i)(II). The commission proposes to reference The National Cooperative Highway Research Report 244 (1981) "Concrete Sealers for the Protection of Bridge Structures" test method for applicable surface chloride screening applications, and would be referenced in proposed §115.450(c)(11)(HH)(vi). The commission proposes to update the existing ASTM test methods list in §115.455(a)(1)(B) to include references to test methods C67, C97/97M, C140, C309 Class B, C373, C642, D523, D714, D3359, D3363, D4060, D4214, D4585, D6490, E96/E96M, E284, E331, E2167, and E2178 since they are included in various proposed definitions throughout §115.450. Proposed §115.450(c)(4)(A), §115.450(c)(5)(A), and §115.450(c)(6)(H), would require use of test method ASTM D523, that extreme high-gloss coatings have a reflectance of 75% or more on a 60 degree meter. Proposed §115.450(c)(9)(F) would require test method ASTM D523 to show a reflectance of at least 85% on a 60 degree meter for high gloss coatings. Test method ASTM E2178 outlines the testing methodology for building envelope coatings to have air barriers with a permeance not exceeding 0.004 cubic feet per minute per square foot under a pressure differential of 1.57 pounds per square foot and is referenced in proposed §115.450(c)(11)(H)(i). Test method ASTM E331 is used to measure water resistance of building envelope coatings with water resistive barriers and is referenced in proposed §115.450(c)(11)(H)(ii)(I). The commission proposes to add the definition of "gonioapparent" in §115.450(c)(11)(S). Gonioapparent is a term that is used to describe decorative coatings, for which VOC content limits are proposed. Test method ASTM E284 is used to measure the change in appearance with the change in the angle of illumination or angle of view of gonioapparent coatings. Test methods ASTM C67, C97/97M, or C140 would be used to verify an improvement in water repellency of at least 80% after application for reactive penetrating sealers and is referenced in proposed §115.450(c)(11)(HH)(iv). Test methods ASTM E96/E96M and ASTM D6490 are used to verify the ability of reactive penetrating sealers to provide a breathable waterproof barrier for concrete or masonry surfaces that does not prevent or substantially retard water vapor transmission and are referenced in proposed §115.450(c)(11)(HH)(v). Test method ASTM D4214 defines an excessively chalky surface for the application of proposed specialty primers to condition such surfaces and is referenced in proposed §115.450(c)(11)(QQ). Test method ASTM E2167 specifies the proper use and specifications for proposed stone consolidants, and is referenced in proposed 115.450(c)(11)(TT)(iii). Test methods ASTM C373, C97/97M, or C642 are used to demonstrate absorption as low as 0.10% for penetrating tile and stone sealers and are referenced in proposed §115.450(c)(11)(VV)(i)(I). Test method ASTM D4060 is used to demonstrate that a proposed tub and tile refinishing coating has a weight loss of 20 milligrams or less after 1,000 cycles as determined with CS-17 wheels on bonderite 1,000, as referenced in proposed §115.450(c)(11)(XX)(ii). Test methods ASTM D4585 and D714 are used to demonstrate a tub and tile refinishing coatings' ability to withstand 1,000 hours or more of exposure with few or no #8 blisters,

determined on unscribed bonderite and are referenced in proposed §115.450(c)(11)(XX)(iii). Test methods ASTM D3359 and D4585 are used to show a tube and tile refinishing coatings' adhesion rating as 4B or better after 24 hours of recovery as determined on unscribed bonderite, as referenced in proposed §115.450(c)(11)(XX)(iv). Test method ASTM D3363 is used to demonstrate a scratch hardness of 3H or harder and a gouge hardness of 4H or harder as determined on bonderite 1000, as referenced in proposed §115.450(c)(11)(XX)(i).

§115.458 Monitoring and Recordkeeping Requirements

The commission proposes to add recordkeeping requirements for the newly proposed architectural coating and industrial maintenance coating provisions for the Bexar County area. The commission is proposing to add a recordkeeping requirement for the newly proposed §115.453(j) industrial maintenance coating VOC limits and replace "or" with "and" in the last sentence of existing §115.458(b)(1), clarifying that records must be kept documenting compliance with all applicable §115.453 surface coating VOC control limits. By adding proposed new VOC content limits in §115.453(j) applicable in Bexar County, the "or" must be changed to "and" since applicable requirements would exist in §115.453(a) and (j) for some owners or operators in Bexar County. Owners or operators of architectural coating and industrial maintenance operations in the Bexar County area would be required to maintain records of solvent information such as VOC content, composition, solids content, and solvent density. Because the rule language requires records for all applicable VOC content limits, no owners or operators in the DFW or HGB areas would be required to maintain records of the industrial maintenance coating VOC content specified in proposed §115.453(j) since these coating limits would not be applicable in these areas. If, however, the contingency measures for industrial maintenance coating VOC content limits in existing §115.453(f) or (g) are triggered according to §115.459(e) or (g), respectively, affected owners or operators would be required to maintain such records because the industrial maintenance coating contingency VOC content limits would be applicable to them. Maintaining records of this information provides evidence that coatings and solvents comply with VOC content limits.

§115.459 Compliance Schedules

To provide owners and operators of metal parts and products coatings operations, architectural coating operations, and industrial maintenance surface coating operations in the Bexar County area with sufficient time to comply with new rule requirements, the commission is proposing to establish a compliance date of March 1, 2026, under §115.459(c). This deadline ensures that facilities can adjust operations and implement necessary changes while ensuring that the required VOC emission reductions needed for RFP are achieved during the attainment year.

DIVISION 6: INDUSTRIAL CLEANING SOLVENTS

Revisions in this division are proposed to generate VOC reductions for RFP requirements.

§115.460 Applicability and Definitions

The commission proposes to amend the definition of "electrical and electronic components" in §115.460(b)(7) for purposes of clarifying the Bexar County §115.461(f) exemption and §115.463(f) control requirements for the Bexar County area. The definition is different in the context of different rule provisions, and this amendment would ensure that the proper definition applies in the context of §115.461(f) and §115.463(f) requirements. The commission also proposes to amend the definition of "solvent cleaning operation" in §115.460(b)(42) for the Bexar County area §115.461(f) exemption and §115.463(f) control requirement.

§115.461 Exemptions

The commission proposes to relocate the existing §115.461(f) exemption to §115.461(g) and insert newly proposed §115.461(f) language that would prohibit the use of existing exemptions §115.461(a) through (d) in Bexar County beginning March 1, 2026. The proposed language would also update references to include the proposed renumbered §115.461(g). If adopted, newly proposed §115.461(f) would limit industrial solvent cleaning exemptions in Bexar County to the following twelve categories: 1) cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics; 2) cleaning conducted with performance laboratory tests, coatings, adhesives, or inks; research and development programs; and laboratory tests in quality assurance laboratories; 3) cleaning of paper-based gaskets, and clutch assemblies where rubber is bonded to metal by means of an adhesive; 4) cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics; 5) medical device and pharmaceutical facilities using up to 1.5 gallons per day of solvents; 6) the cleaning of photocurable resins from stereolithography equipment and models; 7) cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 grams of VOC per liter; 8) cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 grams of VOC per liter; 9) touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided that the solvent used contains no more than 800 grams of VOC per liter; 10) cleaning carried out in batch loaded cold cleaners, vapor degreasers, conveyorized degreasers, or motion picture film cleaning equipment; 11) janitorial cleaning, including graffiti removal; and 12) stripping of cured coatings, cured ink, or cured adhesives. The commission also proposes to add " and (g)" at the end of §115.461(a) to clarify that both industrial solvent activities listed in (f) and cleaning solvents in aerosol cans referenced in (g) of this section are exempt and not required to be quantified. The list of exemptions proposed for Bexar County mirror those in §115.461(e) available in the DFW and HGB areas if the industrial cleaning solvent contingency measures are triggered in those areas.

§115.463 Control Requirements

The commission proposes to add new VOC content limits for industrial cleaning solvent operations in §115.463(f) for the Bexar County area. The industrial cleaning solvent categories that would be subject include product cleaning during manufacturing processes or surface preparations for coating, adhesives, or ink applications; repair and maintenance cleaning; cleaning of coatings or adhesives application equipment; cleaning of ink application equipment; and cleaning of polyester resin application equipment. This measure is projected to reduce VOC emissions from industrial cleaning solvent operations in the Bexar County area and would align control requirements with the contingency measures in DFW and HGB by mirroring the requirements in §115.463(e). The commission also proposes to update the first sentence of §115.463(a) to clarify that sources in the DFW and HGB areas are not subject to §115.463(f), which only apply in the Bexar County area.

§115.465 Approved Test Methods and Testing Requirements

The commission proposes to amend §115.465(1) to specify testing requirements that could be used to verify the new VOC content limits proposed in §115.463(f). Existing testing methods, specified in §115.465(1)(A) through (D), could be used to verify the proposed limits in §115.463(f).

§115.468 Monitoring and Recordkeeping Requirements

The commission proposes to amend §115.468(b)(1) to add recordkeeping requirements for the newly proposed solvent cleaning provisions in the Bexar County area. The proposed amendment to §115.468(b)(1) would require owners and operators of solvent cleaning operations to maintain records documenting compliance with newly proposed §115.463(f) VOC limits. Records demonstrating compliance include testing data, MSDSs, or documentation of the standard reference texts used to determine the true vapor pressure of each VOC component.

§115.469 Compliance Schedules

The commission proposes an update to §115.469(b) to clarify that sources in the Bexar County area subject to the new Subchapter E, Division 6 industrial cleaning solvent requirements must be in compliance no later than March 1, 2026. This provides sufficient time for affected entities to implement compliant cleaning options while reducing VOC emissions prior to the ozone season of the attainment year.

Fiscal Note: Costs to State and Local Government

Kyle Girten, Analyst in the Budget and Planning Division, has determined that for the first five-year period the proposed rules are in effect, no significant fiscal implications are anticipated for TCEQ or other state government entities during implementation of the proposed rule.

Fiscal implications are anticipated for one city government entity during implementation of the proposed rule. It is estimated that new gasoline dispensing nozzles and low permeability hoses would need to be installed at 11 city refueling stations to comply with the proposed addition of Subchapter C, Division 6. Total costs as needed to replace all gasoline nozzles and gasoline dispensing hoses with low permeability hoses is estimated at $70,000 in year one. It is estimated that there would be savings of approximately $4,000 each year in years two through five because gasoline leakage would reduce with the new hoses.

Public Benefits and Costs

Mr. Girten determined that for each year of the first five years the proposed rules are in effect, the public benefit anticipated will be compliance with federal law and continued protection of the environment and public health and safety combined with efficient and fair administration of VOC emission standards for Bexar County. Corrections of errors and other non-substantive changes within the rule would also benefit the public.

Costs would be incurred for affected businesses operating in Bexar County for implementation of requirements appliable to RACT. This rulemaking would lower the major source threshold from 100 tpy to 50 tpy VOC for lithographic printing operations (Subchapter E, Division 4), bakery ovens (Subchapter B, Division 2), and VOC storage tanks (Subchapter B, Division 1). Additionally, to meet the required RFP reduction target, revisions would be made as needed to implement stricter VOC limits for degreasing processes (Subchapter E, Division 1), fabric coating (Subchapter E, Division 2), coating of metal parts, architectural coatings, and industrial maintenance coatings (Subchapter E, Division 5), industrial cleaning solvent provisions (Subchapter E, Division 6), and gasoline dispensing nozzles and low permeation hoses from motor vehicle dispensing facilities (Subchapter C, Division 6). Any impacted business may be required to update their permit with TCEQ to update processes that are approved for use at their facilities, and some costs may be incurred to meet these permitting requirements. Costs specific to affected businesses are discussed below.

It is estimated that there are 37 commercial bakeries, 61 lithographic printing facilities, and 25 facilities with VOC storage tanks that would be affected by this rulemaking. Because the individuals who are responsible for the sources should have implemented RACT measures after the updates to this Chapter were made on April 24, 2024 (Rule Project No. 2023-116-115-AI), it is not anticipated that any additional costs would be incurred for these businesses. Should any commercial bakeries need to implement RACT measures, the cost per bakery is estimated at $492,000 in year one and $74,000 in years two through five, and this includes costs related to incinerator control, monitoring, testing, and recordkeeping. Should any lithographic printing facilities need to implement RACT measures, the cost per facility is estimated at $22,000 each year as needed to meet control and recordkeeping requirements. Should RACT measures need implemented for VOC storage tanks, the cost per tanks is estimated at $150,280 in the year one and $22,100 in years two through five as needed to meet control, monitoring, testing, seal inspection, and recordkeeping requirements.

The remaining businesses that would be affected are nonpoint area sources. It is estimated that there are eight facilities with degreasing processes, 25 facilities with fabric coating processes, 23 facilities with metal parts and products, five facilities with architectural coating processes, 98 facilities that use industrial maintenance coatings, 98 facilities that use industrial cleaning solvents, and up to 1,181 retail gas stations that would incur costs.

Degreasing requirements (Subchapter E, Division 1) would apply to owners or operators of cold solvent cleaning, open-top vapor degreasing, and conveyorized decreasing processes. Total costs, as needed to meet lower VOC content requirements for degreasing materials, and associated recordkeeping, reporting, monitoring, or testing requirements is estimated to total approximately $270,000 in year one and $50,000 in years two through five.

Fabric coating requirements (Subchapter E, Division 2) would apply to fabric coating and wash primers. Total costs, as needed to meet lower VOC content requirements, and associated recordkeeping, reporting, monitoring, or testing requirements is estimated to total approximately $1.3 million each year of the first five years the proposed rules are in effect.

Metal parts, architectural coatings, and industrial maintenance coatings (Subchapter E, Division 5) would apply to coating processes. For metal parts, total costs as needed to meet lower VOC content requirements, and associated recordkeeping, reporting, monitoring, or testing requirements is $3.9 million each year of the first five years the proposed rules are in effect. For architectural coatings, costs to meet lower VOC content requirements, and associated recordkeeping, reporting, monitoring, or testing requirements similarly totals $3.9 million each year. No additional expenses are anticipated for businesses that use industrial maintenance coatings because recordkeeping for current materials is assumed to be done already. For the same

reason, businesses that use industrial cleaning solvents (Subchapter E, Division 6) are not anticipated to incur any additional expenses.

Requirements related to gas stations (Subchapter C, Division 6) would apply to all retail gas stations in Bexar County. Assuming 670 gas stations are impacted, the total costs as needed to replace all gasoline nozzles and replace gasoline dispensing hoses with low permeability hoses is $4.3 million in year one. It is estimated that there would be savings of over $230,000 each year in years two through five because gasoline leakage would reduce with the new hoses.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rulemaking is not anticipated to adversely affect a local economy in a significant way for the first five years that the proposed rule is in effect.

Rural Communities Impact Assessment

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. This rulemaking applies to Bexar County, which has a large population; therefore, rural communities are not significantly impacted. Some commercial bakeries, VOC storage tanks, degreasing operations, surface coating operations, and gasoline stations in rural communities would be impacted, but no adverse impacts to these communities are anticipated.

Small Business and Micro-Business Assessment

No significant adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rule for the first five-year period the proposed rules are in effect. It is estimated there are seven commercial bakeries that are small businesses (four of which are micro-businesses), 61 lithographic printing facilities (53 of which are micro-businesses), 18 VOC storage tanks (all of which are micro-businesses), 11 small businesses that use fabric coating processes (all of which are micro-businesses), eight small businesses that use metal parts and product coatings (all of which are micro-businesses), 98 small businesses that use industrial maintenance coatings (88 of which are micro-businesses), and 590 gasoline stations (541 of which are micro-businesses).

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rule does not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect. The proposed rules are required to represent RACT requirements that are technologically and economically feasible for regulated sources. The same compliance and reporting requirements are necessary and apply to all businesses regardless of size.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require an increase or decrease in fees paid to the agency. The proposed rulemaking amends an existing regulation, and it does not increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rule should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory impact analysis requirements of Texas Government Code, §2001.0225, and determined that the proposed rulemaking does not meet the definition of a major environmental rule as defined in that statute, and in addition, if it did meet the definition, would not be subject to the requirement to prepare a regulatory impact analysis. A major environmental rule means a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure, and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. Additionally, the proposed rulemaking does not meet any of the four applicability criteria for requiring a regulatory impact analysis for a major environmental rule, which are listed in Tex. Gov't Code Ann., §2001.0225(a). Section 2001.0225 of the Texas Government Code applies only to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The specific intent of these proposed rules is to comply with federal requirements for the implementation of control strategies necessary to attain and maintain the NAAQS for ozone mandated by 42 United States Code (USC), 7410, FCAA, §110, and required to be included in operating permits by 42 USC, §7661a, FCAA, §502, as specified elsewhere in this preamble. The proposed rulemaking addresses RACT and RFP requirements for the Bexar County 2015 eight-hour ozone nonattainment area as discussed elsewhere in this preamble. States are required to adopt SIPs with enforceable emission limitations and other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of the FCAA. As discussed in the FISCAL NOTE portion of this preamble, the proposed rules are not anticipated to add any significant additional costs to affected individuals or businesses beyond what is necessary to attain the ozone NAAQS on the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state.

If a state does not comply with its obligations under 42 USC, §7410, FCAA, §110 to submit SIPs, states are subject to discretionary sanctions under 42 USC, §7410(m) or mandatory sanctions under 42 USC, §7509, FCAA, §179; as well as the imposition of a federal implementation plan (FIP) under 42 USC, §7410, FCAA, §110(c). Under 42 USC, §7661a, FCAA, §502, states are required to have federal operating permit programs that provide authority to issue permits and assure compliance with each applicable standard, regulation, or requirement under the FCAA, including enforceable emission limitations and other

control measures, means, or techniques, which are required under 42 USC, §7410, FCAA, §110. Similar to requirements in 42 USC, §7410, FCAA, §110, states are not free to ignore requirements in 42 USC, §7661a, FCAA, §502 and must develop and submit programs to provide for operating permits for major sources that include all applicable requirements of the FCAA. Lastly, states are also subject to the imposition of sanctions under 42 USC, §7661a(d) and (i), FCAA, §502(d) and (i) for failure to submit an operating permits program, the disapproval of any operating permits program, or failure to adequately administer and enforce the approved operating permits program.

The requirement to provide a fiscal analysis of regulations in the Texas Government Code was amended by Senate Bill (SB) 633 during the 75th legislative session in 1997. The intent of SB 633 was to require agencies to conduct a regulatory impact analysis of extraordinary rules. These are identified in the statutory language as major environmental rules that will have a material adverse impact and will exceed a requirement of state law, federal law, or a delegated federal program, or are adopted solely under the general powers of the agency. With the understanding that this requirement would seldom apply, the commission provided a cost estimate for SB 633 that concluded "based on an assessment of rules adopted by the agency in the past, it is not anticipated that the bill will have significant fiscal implications for the agency due to its limited application." The commission also noted that the number of rules that would require assessment under the provisions of the bill was not large. This conclusion was based, in part, on the criteria set forth in the bill that exempted rules from the full analysis unless the rule was a major environmental rule that exceeds a federal law. Because of the ongoing need to meet federal requirements, the commission routinely proposes and adopts rules incorporating or designed to satisfy specific federal requirements. The legislature is presumed to understand this federal scheme. If each rule proposed by the commission to meet a federal requirement was considered to be a major environmental rule that exceeds federal law, then each of those rules would require the full regulatory impact analysis (RIA) contemplated by SB 633. Requiring a full RIA for all federally required rules is inconsistent with the conclusions reached by the commission in its cost estimate and by the Legislative Budget Board (LBB) in its fiscal notes. Since the legislature is presumed to understand the fiscal impacts of the bills it passes, and that presumption is based on information provided by state agencies and the LBB, the that the intent of SB 633 was only to require the full RIA for rules that are extraordinary in nature. While the proposed rules may have a broad impact, that impact is no greater than is necessary or appropriate to meet the requirements of the FCAA, and in fact creates no additional impacts since the proposed rules do not impose burdens greater than required to demonstrate attainment of the ozone NAAQS as discussed elsewhere in this preamble. For these reasons, the proposed rules fall under the exception in Texas Government Code, §2001.0225(a), because they are required by, and do not exceed, federal law.

The commission has consistently applied this construction to its rules since this statute was enacted in 1997. Since that time, the legislature has revised the Texas Government Code, but left this provision substantially unamended. It is presumed that "when an agency interpretation is in effect at the time the legislature amends the laws without making substantial change in the statute, the legislature is deemed to have accepted the agency's interpretation." (*Central Power & Light Co. v. Sharp*, 919 S.W.2d 485, 489 (Tex. App. Austin 1995), *writ denied with per curiam opinion respecting another issue*, 960 S.W.2d 617 (Tex. 1997); *Bullock v. Marathon Oil Co.*, 798 S.W.2d 353, 357 (Tex. App. Austin 1990, *no writ*). *Cf. Humble Oil & Refining Co. v. Calvert*, 414 S.W.2d 172 (Tex. 1967); *Dudney v. State Farm Mut. Auto Ins. Co.*, 9 S.W.3d 884, 893 (Tex. App. Austin 2000); *Southwestern Life Ins. Co. v. Montemayor*, 24 S.W.3d 581 (Tex. App. Austin 2000, *pet. denied*); and *Coastal Indust. Water Auth. v. Trinity Portland Cement Div.*, 563 S.W.2d 916 (Tex. 1978).) The commission's interpretation of the RIA requirements is also supported by a change made to the Texas Administrative Procedure Act (APA) by the legislature in 1999. In an attempt to limit the number of rule challenges based upon APA requirements, the legislature clarified that state agencies are required to meet these sections of the APA against the standard of "substantial compliance" (Texas Government Code, §2001.035). The legislature specifically identified Texas Government Code, §2001.0225 as falling under this standard.

As discussed in this analysis and elsewhere in this preamble, the commission has substantially complied with the requirements of Texas Government Code, §2001.0225. The proposed rulemaking implements the requirements of the FCAA as discussed in this analysis and elsewhere in this preamble. The proposed rules were determined to be necessary to attain the ozone NAAQS and are required to be included in permits under 42 USC, §7661a, FCAA, §502 and will not exceed any standard set by state or federal law. These proposed rules are not an express requirement of state law. The proposed rules do not exceed a requirement of a delegation agreement or a contract between state and federal government, as the proposed rules, if adopted by the commission and approved by EPA, will become federal law as part of the approved SIP required by 42 U.S.C. §7410, FCAA, §110. The proposed rules were not developed solely under the general powers of the agency but are authorized by specific sections of Texas Health and Safety Code, Chapter 382 (also known as the Texas Clean Air Act), and the Texas Water Code, which are cited in the Statutory Authority section of this preamble, including Texas Health and Safety Code, §§382.011, 382.012, and 382.017. Therefore, this proposed rulemaking action is not subject to the regulatory analysis provisions of Texas Government Code, §2001.0225(b).

The commission invites public comment regarding the Draft RIA Determination during the public comment period. Written comments on the Draft RIA Determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

Under Texas Government Code, §2007.002(5), taking means a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or §17 or §19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action; and is the producing cause of a reduction of at least 25% in the market value of the affected private real property, determined by comparing the market value of the property as if the governmental action is not in effect and the market value of the property determined as if the governmental action is in effect. The commission

completed a takings impact analysis for the proposed rulemaking action under the Texas Government Code, §2007.043.

The primary purpose of this proposed rulemaking action, as discussed elsewhere in this preamble, is to meet federal requirements for the implementation of control strategies necessary to attain and maintain the NAAQS for ozone mandated by 42 United States Code (USC), 7410, FCAA, §110, and required to be included in operating permits by 42 USC, §7661a, FCAA, §502. The proposed rulemaking addresses VOC RACT and RFP requirements for the Bexar County 2015 eight-hour ozone nonattainment area as discussed elsewhere in this preamble.

States are required to adopt SIPs with enforceable emission limitations and other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of the FCAA. If a state does not comply with its obligations under 42 USC, §7410, FCAA, §110 to submit SIPs, states are subject to discretionary sanctions under 42 USC, §7410(m) or mandatory sanctions under 42 USC, §7509, FCAA, §179; as well as the imposition of a FIP under 42 USC, §7410, FCAA, §110(c). Under 42 USC, §7661a, FCAA, §502, states are required to have federal operating permit programs that provide authority to issue permits and assure compliance with each applicable standard, regulation, or requirement under the FCAA, including enforceable emission limitations and other control measures, means, or techniques, which are required under 42 USC, §7410, FCAA, §110. Similar to requirements in 42 USC, §7410, FCAA, §110, regarding the requirement to adopt and implement plans to attain and maintain the national ambient air quality standards, states are not free to ignore requirements in 42 USC, §7661a, FCAA, §502 and must develop and submit programs to provide for operating permits for major sources that include all applicable requirements of the FCAA. Lastly, states are also subject to the imposition of sanctions under 42 USC, §7661a(d) and (i), FCAA, §502(d) and (i) for failure to submit an operating permits program, the disapproval of any operating permits program, or failure to adequately administer and enforce the approved operating permits program.

The proposed rules will not create any additional burden on private real property beyond what is required under federal law, as the proposed rules, if adopted by the commission and approved by EPA, will become federal law as part of the approved SIP required by 42 U.S.C. §7410, FCAA, §110. The proposed rules will not affect private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. The proposal also will not affect private real property in a manner that restricts or limits an owner's right to the property that would otherwise exist in the absence of the governmental action. Therefore, the proposed rulemaking will not cause a taking under Texas Government Code, Chapter 2007.

Consistency with the Coastal Management Program

The commission reviewed the proposed rulemaking and found the proposal is a rulemaking identified in the Coastal Coordination Act Implementation Rules, 31 TAC §29.11(b)(2), relating to rules subject to the Coastal Management Program, and will, therefore, require that goals and policies of the Texas Coastal Management Program (CMP) be considered during the rulemaking process.

The commission reviewed this rulemaking for consistency with the CMP goals and policies in accordance with the regulations of the Coastal Coordination Advisory Committee and determined that the rulemaking will not affect any coastal natural resource areas because the rules only affect counties outside the CMP area and is, therefore, consistent with CMP goals and policies.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Effect on Sites Subject to the Federal Operating Permits Program

Chapter 115 is an applicable requirement under 30 TAC Chapter 122, Federal Operating Permits Program. Once adopted, owners or operators of affected sites subject to the federal operating permit program must, consistent with the revision process in Chapter 122, upon the effective date of the rulemaking, revise their operating permit to include the new Chapter 115 requirements.

Announcement of Hearing

The commission will offer a public hearing on this proposal in San Antonio on August 19, 2025, at 7:00 p.m. Central Daylight Time at the Alamo Area Council of Governments (AACOG) at 2700 NE Loop 410, Suite 101. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Gwen Ricco, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted at: https://tceq.commentinput.com/comment/search. File size restrictions may apply to comments being submitted via the TCEQ Public Comments system. All comments should reference Rule Project Number 2025-006-115-AI. The comment period closes on August 25, 2025. Please choose one of the methods provided to submit your written comments.

Copies of the proposed rulemaking can be obtained from the commission's website at *https://www.tceq.texas.gov/rules/propose_adopt.html*. For further information, please contact Julia Segura, Air Quality Planning Section, and julia.segura@tceq.texas.gov.

SUBCHAPTER B. GENERAL VOLATILE ORGANIC COMPOUND SOURCES

DIVISION 1. STORAGE OF VOLATILE ORGANIC COMPOUNDS

30 TAC §§115.111, 115.112, 115.119

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the

commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.111. Exemptions.

(a) The following exemptions apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas as defined in §115.10 of this title (relating to Definitions), except as noted in paragraphs (2), (4), (6), (7), and (9) - (11) of this subsection.

(1) Except as provided in §115.118 of this title (relating to Recordkeeping Requirements), a storage tank storing volatile organic compounds (VOC) with a true vapor pressure less than 1.5 pounds per square inch absolute (psia) is exempt from the requirements of this division.

(2) A storage tank with storage capacity less than 210,000 gallons storing crude oil or condensate prior to custody transfer in the Beaumont-Port Arthur, Bexar County, or El Paso areas, is exempt from the requirements of this division. This exemption no longer applies in the Dallas-Fort Worth area beginning March 1, 2013.

(3) A storage tank with a storage capacity less than 25,000 gallons located at a motor vehicle fuel dispensing facility is exempt from the requirements of this division.

(4) A welded storage tank in the Beaumont-Port Arthur, Bexar County, El Paso, and Houston-Galveston-Brazoria areas with a mechanical shoe primary seal that has a secondary seal from the top of the shoe seal to the tank wall (a shoe-mounted secondary seal) is exempt from the requirement for retrofitting with a rim-mounted secondary seal if the shoe-mounted secondary seal was installed or scheduled for installation before August 22, 1980.

(5) An external floating roof storage tank storing waxy, high pour point crude oils is exempt from any secondary seal requirements of §115.112(a), (d), and (e) of this title (relating to Control Requirements).

(6) A welded storage tank in the Beaumont-Port Arthur, Bexar County, El Paso, and Houston-Galveston-Brazoria areas storing VOC with a true vapor pressure less than 4.0 psia is exempt from any external floating roof secondary seal requirement if any of the following types of primary seals were installed before August 22, 1980:

(A) a mechanical shoe seal;

(B) a liquid-mounted foam seal; or

(C) a liquid-mounted liquid filled type seal.

(7) A welded storage tank in the Beaumont-Port Arthur, Bexar County, El Paso, and Houston-Galveston-Brazoria areas storing crude oil with a true vapor pressure equal to or greater than 4.0 psia and less than 6.0 psia is exempt from any external floating roof secondary seal requirement if any of the following types of primary seals were installed before December 10, 1982:

(A) a mechanical shoe seal;

(B) a liquid-mounted foam seal; or

(C) a liquid-mounted liquid filled type seal.

(8) A storage tank with storage capacity less than or equal to 1,000 gallons is exempt from the requirements of this division.

(9) In the Houston-Galveston-Brazoria area, a storage tank or tank battery storing condensate, as defined in §101.1 of this title (relating to Definitions), prior to custody transfer with a condensate throughput exceeding 1,500 barrels (63,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(d)(4) or (e)(4)(A) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title (relating to Approved Test Methods), that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 25 tons per year on a rolling 12-month basis.

(10) In the Dallas-Fort Worth area, except Wise County, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(B) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 50 tons per year on a rolling 12-month basis. This exemption no longer applies on November 7, 2025.

(11) In the Dallas-Fort Worth area, except in Wise County, on or after November 7, 2025, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 1,500 barrels (63,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(B) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 25 tons per year on a rolling 12-month basis.

(12) In Wise County, prior to July 20, 2021, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 6,000 barrels (252,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(C)(i) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 100 tons per year on a rolling 12-month basis.

(13) In Wise County until November 7, 2025, [,] a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in

§115.112(e)(4)(C)(ii) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 50 tons per year on a rolling 12-month basis.

(14) In Wise County beginning November 7, 2025, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 1,500 barrels (63,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(D) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 25 tons per year on a rolling 12-month basis.

(15) In the Bexar County area beginning January 1, 2025, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 6,000 barrels (252,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(E) of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 100 tons per year on a rolling 12-month basis [~~of this title, to control flashed gases if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 100 tons per year on a rolling 12-month basis~~].

(16) In the Bexar County, Dallas-Fort Worth, and Houston-Galveston-Brazoria areas, beginning when compliance is achieved with Division 7 of this subchapter (relating to Oil and Natural Gas Service in Ozone Nonattainment Areas) but no later than its initial §115.183 compliance deadline, a storage tank storing crude oil or condensate that is subject to the compliance requirements of Division 7 of this subchapter is exempt from all requirements in this division.

(17) In the Bexar County area beginning March 1, 2026, a storage tank or tank battery storing condensate prior to custody transfer with a condensate throughput exceeding 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis is exempt from the requirement in §115.112(e)(4)(E) of this title, to control flashed gases, if the owner or operator demonstrates, using the test methods specified in §115.117 of this title, that uncontrolled VOC emissions from the individual storage tank, or from the aggregate of storage tanks in a tank battery, are less than 50 tons per year on a rolling 12-month basis.

(b) The following exemptions apply in Gregg, Nueces, and Victoria Counties.

(1) Except as provided in §115.118 of this title, a storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.

(2) A storage tank with storage capacity less than 210,000 gallons storing crude oil or condensate prior to custody transfer is exempt from the requirements of this division.

(3) A storage tank with storage capacity less than 25,000 gallons located at a motor vehicle fuel dispensing facility is exempt from the requirements of this division.

(4) A welded storage tank with a mechanical shoe primary seal that has a secondary seal from the top of the shoe seal to the tank wall (a shoe-mounted secondary seal) is exempt from the requirement for retrofitting with a rim-mounted secondary seal if the shoe-mounted secondary seal was installed or scheduled for installation before August 22, 1980.

(5) An external floating roof storage tank storing waxy, high pour point crude oils is exempt from any secondary seal requirements of §115.112(b) of this title.

(6) A welded storage tank storing VOC with a true vapor pressure less than 4.0 psia is exempt from any external secondary seal requirement if any of the following types of primary seals were installed before August 22, 1980:

(A) a mechanical shoe seal;

(B) a liquid-mounted foam seal; or

(C) a liquid-mounted liquid filled type seal.

(7) A welded storage tank storing crude oil with a true vapor pressure equal to or greater than 4.0 psia and less than 6.0 psia is exempt from any external secondary seal requirement if any of the following types of primary seals were installed before December 10, 1982:

(A) a mechanical shoe seal;

(B) a liquid-mounted foam seal; or

(C) a liquid-mounted liquid filled type seal.

(8) A storage tank with storage capacity less than or equal to 1,000 gallons is exempt from the requirements of this division.

(c) The following exemptions apply in Aransas, Bexar, Calhoun, Matagorda, San Patricio, and Travis Counties. The exemptions in this subsection no longer apply in Bexar County beginning January 1, 2025.

(1) A storage tank storing VOC with a true vapor pressure less than 1.5 psia is exempt from the requirements of this division.

(2) Slotted guidepoles installed in a floating roof storage tank are exempt from the provisions of §115.112(c) of this title.

(3) A storage tank with storage capacity between 1,000 gallons and 25,000 gallons is exempt from the requirements of §115.112(c)(1) of this title if construction began before May 12, 1973.

(4) A storage tank with storage capacity less than or equal to 420,000 gallons is exempt from the requirements of §115.112(c)(3) of this title.

(5) A storage tank with storage capacity less than or equal to 1,000 gallons is exempt from the requirements of this division.

§115.112. Control Requirements.

(a) The following requirements apply in the Beaumont-Port Arthur, Dallas-Fort Worth, and El Paso areas, as defined in §115.10 of this title (relating to Definitions). The control requirements in this subsection no longer apply in the Dallas-Fort Worth area beginning March 1, 2013.

(1) No person shall place, store, or hold in any storage tank any volatile organic compounds (VOC) unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table I(a) of this paragraph for VOC other than crude oil and condensate or Table II(a) of this paragraph for crude oil and condensate.

Figure: 30 TAC §115.112(a)(1) (No change.)

(2) For an external floating roof or internal floating roof storage tank subject to the provisions of paragraph (1) of this subsection, the following requirements apply.

(A) All openings in an internal floating roof or external floating roof except for automatic bleeder vents (vacuum breaker vents) and rim space vents must provide a projection below the liquid surface or be equipped with a cover, seal, or lid. Any cover, seal, or lid must be in a closed (i.e., no visible gap) position at all times except when the device is in actual use.

(B) Automatic bleeder vents (vacuum breaker vents) must be closed at all times except when the roof is being floated off or landed on the roof leg supports.

(C) Rim vents, if provided, must be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

(D) Any roof drain that empties into the stored liquid must be equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening.

(E) There must be no visible holes, tears, or other openings in any seal or seal fabric.

(F) For an external floating roof storage tank, secondary seals must be the rim-mounted type (the seal must be continuous from the floating roof to the tank wall). The accumulated area of gaps that exceed 1/8 inch in width between the secondary seal and storage tank wall may not be greater than 1.0 square inch per foot of tank diameter.

(3) Vapor control systems, as defined in §115.10 of this title, used as a control device on any storage tank must maintain a minimum control efficiency of 90%. If a flare is used, it must be designed and operated in accordance with 40 Code of Federal Regulations §60.18(b) - (f) (as amended through December 22, 2008 (73 FR 78209)) and be lit at all times when VOC vapors are routed to the flare.

(b) The following requirements apply in Gregg, Nueces, and Victoria Counties.

(1) No person shall place, store, or hold in any storage tank any VOC, unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table I(a) in subsection (a)(1) of this section for VOC other than crude oil and condensate or Table II(a) in subsection (a)(1) of this section for crude oil and condensate. If a flare is used as a vapor recovery system, as defined in §115.10 of this title, it must be designed and operated in accordance with 40 Code of Federal Regulations §60.18(b) - (f) (as amended through December 22, 2008 (73 FR 78209)) and be lit at all times when VOC vapors are routed to the flare.

(2) For an external floating roof or internal floating roof storage tank subject to the provisions of paragraph (1) of this subsection, the following requirements apply.

(A) All openings in an internal floating roof or external floating roof, except for automatic bleeder vents (vacuum breaker vents) and rim space vents, must provide a projection below the liquid surface or be equipped with a cover, seal, or lid. Any cover, seal, or lid must be in a closed (i.e., no visible gap) position at all times, except when the device is in actual use.

(B) Automatic bleeder vents (vacuum breaker vents) must be closed at all times except when the roof is being floated off or landed on the roof leg supports.

(C) Rim vents, if provided, must be set to open only when the roof is being floated off the roof leg supports or at the manufacturer's recommended setting.

(D) Any roof drain that empties into the stored liquid must be equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening.

(E) There must be no visible holes, tears, or other openings in any seal or seal fabric.

(F) For an external floating roof storage tank, secondary seals must be the rim-mounted type (the seal shall be continuous from the floating roof to the tank wall). The accumulated area of gaps that exceed 1/8 inch in width between the secondary seal and tank wall may not be greater than 1.0 square inch per foot of tank diameter.

(c) The following requirements apply in Aransas, Bexar, Calhoun, Matagorda, San Patricio, and Travis Counties. The control requirements of this subsection no longer apply for sources located in Bexar County beginning January 1, 2025.

(1) No person may place, store, or hold in any storage tank any VOC, other than crude oil or condensate, unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table I(b) of this paragraph for VOC other than crude oil and condensate.
Figure: 30 TAC §115.112(c)(1) (No change.)

(2) For an external floating roof or internal floating roof storage tank subject to the provisions of paragraph (1) of this subsection, the following requirements apply.

(A) There must be no visible holes, tears, or other openings in any seal or seal fabric.

(B) All tank gauging and sampling devices must be vapor-tight except when gauging and sampling is taking place.

(3) No person in Matagorda or San Patricio Counties shall place, store, or hold crude oil or condensate in any storage tank unless the storage tank is a pressure tank capable of maintaining working pressures sufficient at all times to prevent vapor or gas loss to the atmosphere or is equipped with one of the following control devices, properly maintained and operated:

(A) an internal floating roof or external floating roof, as defined in §115.10 of this title. These control devices will not be allowed if the VOC has a true vapor pressure of 11.0 pounds per square inch absolute (psia) or greater. All tank-gauging and tank-sampling devices must be vapor-tight, except when gauging or sampling is taking place; or

(B) a vapor control system as defined in §115.10 of this title.

(d) The following requirements apply in the Houston-Galveston-Brazoria area, as defined in §115.10 of this title. The requirements in this subsection no longer apply beginning March 1, 2013.

(1) No person shall place, store, or hold in any storage tank any VOC unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in either Table I(a) of subsection (a)(1) of this section for VOC other than crude oil and condensate or Table II(a) of subsection (a)(1) of this section for crude oil and condensate.

(2) For an external floating roof or internal floating roof storage tank subject to the provisions of paragraph (1) of this subsection, the following requirements apply.

(A) All openings in an internal floating roof or external floating roof as defined in §115.10 of this title except for automatic

bleeder vents (vacuum breaker vents), and rim space vents must provide a projection below the liquid surface. All openings in an internal floating roof or external floating roof except for automatic bleeder vents (vacuum breaker vents), rim space vents, leg sleeves, and roof drains must be equipped with a deck cover. The deck cover must be equipped with a gasket in good operating condition between the cover and the deck. The deck cover must be closed (i.e., no gap of more than 1/8 inch) at all times, except when the cover must be open for access.

(B) Automatic bleeder vents (vacuum breaker vents) and rim space vents must be equipped with a gasketed lid, pallet, flapper, or other closure device and must be closed (i.e., no gap of more than 1/8 inch) at all times except when required to be open to relieve excess pressure or vacuum in accordance with the manufacturer's design.

(C) Each opening into the internal floating roof for a fixed roof support column may be equipped with a flexible fabric sleeve seal instead of a deck cover.

(D) Any external floating roof drain that empties into the stored liquid must be equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening or an equivalent control that must be kept in a closed (i.e., no gap of more than 1/8 inch) position at all times except when the drain is in actual use. Stub drains on an internal floating roof storage tank are not subject to this requirement.

(E) There must be no visible holes, tears, or other openings in any seal or seal fabric.

(F) For an external floating roof storage tank, secondary seals must be the rim-mounted type (the seal must be continuous from the floating roof to the tank wall with the exception of gaps that do not exceed the following specification). The accumulated area of gaps that exceed 1/8 inch in width between the secondary seal and storage tank wall may not be greater than 1.0 square inch per foot of storage tank diameter.

(G) Each opening for a slotted guidepole in an external floating roof storage tank must be equipped with one of the following control device configurations:

(i) a pole wiper and pole float that has a seal or wiper at or above the height of the pole wiper;

(ii) a pole wiper and a pole sleeve;

(iii) an internal sleeve emission control system;

(iv) a retrofit to a solid guidepole system;

(v) a flexible enclosure system; or

(vi) a cover on an external floating roof tank.

(H) The external floating roof or internal floating roof must be floating on the liquid surface at all times except as specified in this subparagraph. The external floating roof or internal floating roof may be supported by the leg supports or other support devices, such as hangers from the fixed roof, during the initial fill or refill after the storage tank has been cleaned or as allowed under the following circumstances:

(i) when necessary for maintenance or inspection;

(ii) when necessary for supporting a change in service to an incompatible liquid;

(iii) when the storage tank has a storage capacity less than 25,000 gallons or the vapor pressure of the material stored is less than 1.5 psia;

(iv) when the vapors are routed to a control device from the time the floating roof is landed until the floating roof is within ten percent by volume of being refloated;

(v) when all VOC emissions from the tank, including emissions from roof landings, have been included in a floating roof storage tank emissions limit or cap approved under Chapter 116 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification); or

(vi) when all VOC emissions from floating roof landings at the regulated entity, as defined in §101.1 of this title (relating to Definitions), are less than 25 tons per year.

(3) Vapor control systems, as defined in §115.10 of this title, used as a control device on any storage tank must maintain a minimum control efficiency of 90%.

(4) For a storage tank storing condensate, as defined in §101.1 of this title, prior to custody transfer, flashed gases must be routed to a vapor control system if the liquid throughput through an individual tank or the aggregate of tanks in a tank battery exceeds 1,500 barrels (63,000 gallons) per year.

(5) For a storage tank storing crude oil or condensate prior to custody transfer or at a pipeline breakout station, flashed gases must be routed to a vapor control system if the uncontrolled VOC emissions from an individual storage tank, or from the aggregate of storage tanks in a tank battery, equal or exceed 25 tons per year on a rolling 12-month basis. Uncontrolled emissions must be estimated by one of the following methods; however, if emissions determined using direct measurements or other methods approved by the executive director under subparagraph (A) or (D) of this paragraph are higher than emissions estimated using the default factors or charts in subparagraph (B) or (C) of this paragraph, the higher values must be used.

(A) The owner or operator may make direct measurements using the measuring instruments and methods specified in §115.117 of this title (relating to Approved Test Methods).

(B) The owner or operator may use a factor of 33.3 pounds of VOC per barrel (42 gallons) of condensate produced or 1.6 pounds of VOC per barrel (42 gallons) of oil produced.

(C) For crude oil storage only, the owner or operator may use the chart in Exhibit 2 of the United States Environmental Protection Agency publication *Lessons Learned from Natural Gas Star Partners: Installing Vapor Recovery Units on Crude Oil Storage Tanks,* October 2003, and assuming that the hydrocarbon vapors have a molecular weight of 34 pounds per pound mole and are 48% by weight VOC.

(D) Other test methods or computer simulations may be allowed if approved by the executive director.

(e) The control requirements in this subsection apply in the Bexar County, Houston-Galveston-Brazoria, and Dallas-Fort Worth areas, except as specified in §115.119 of this title (relating to Compliance Schedules) and in paragraph (3) of this subsection. Beginning on the applicable compliance date specified in §115.183 of this title (relating to Compliance Schedules), the requirements in this subsection no longer apply to storage tanks storing crude oil or condensate that are subject to Division 7 of this subchapter (relating to Oil and Natural Gas Service in Ozone Nonattainment Areas).

(1) No person shall place, store, or hold VOC in any storage tank unless the storage tank is capable of maintaining working pressure sufficient at all times to prevent any vapor or gas loss to the atmosphere or is in compliance with the control requirements specified in Table 1 of this paragraph for VOC other than crude oil and condensate or Table 2 of this paragraph for crude oil and condensate.

Figure: 30 TAC §115.112(e)(1) (No change.)

(2) For an external floating roof or internal floating roof storage tank subject to the provisions of paragraph (1) of this subsection, the following requirements apply.

(A) All openings in an internal floating roof or external floating roof must provide a projection below the liquid surface. Automatic bleeder vents (vacuum breaker vents) and rim space vents are not subject to this requirement.

(B) All openings in an internal floating roof or external floating roof must be equipped with a deck cover. The deck cover must be equipped with a gasket in good operating condition between the cover and the deck. The deck cover must be closed (i.e., no gap of more than 1/8 inch) at all times, except when the cover must be open for access. Automatic bleeder vents (vacuum breaker vents), rim space vents, leg sleeves, and roof drains are not subject to this requirement.

(C) Automatic bleeder vents (vacuum breaker vents) and rim space vents must be equipped with a gasketed lid, pallet, flapper, or other closure device and must be closed (i.e., no gap of more than 1/8 inch) at all times except when required to be open to relieve excess pressure or vacuum in accordance with the manufacturer's design.

(D) Each opening into the internal floating roof for a fixed roof support column may be equipped with a flexible fabric sleeve seal instead of a deck cover.

(E) Any external floating roof drain that empties into the stored liquid must be equipped with a slotted membrane fabric cover that covers at least 90% of the area of the opening or an equivalent control that must be kept in a closed (i.e., no gap of more than 1/8 inch) position at all times except when the drain is in actual use. Stub drains on an internal floating roof storage tank are not subject to this requirement.

(F) There must be no visible holes, tears, or other openings in any seal or seal fabric.

(G) For an external floating roof storage tank, secondary seals must be the rim-mounted type. The seal must be continuous from the floating roof to the tank wall with the exception of gaps that do not exceed the following specification. The accumulated area of gaps that exceed 1/8 inch in width between the secondary seal and storage tank wall may not be greater than 1.0 square inch per foot of storage tank diameter.

(H) Each opening for a slotted guidepole in an external floating roof storage tank must be equipped with one of the following control device configurations:

(i) a pole wiper and pole float that has a seal or wiper at or above the height of the pole wiper;

(ii) a pole wiper and a pole sleeve;

(iii) an internal sleeve emission control system;

(iv) a retrofit to a solid guidepole system;

(v) a flexible enclosure system; or

(vi) a cover on an external floating roof tank.

(I) The external floating roof or internal floating roof must be floating on the liquid surface at all times except as allowed under the following circumstances:

(i) during the initial fill or refill after the storage tank has been cleaned;

(ii) when necessary for preventive maintenance, roof repair, primary seal inspection, or removal and installation of a secondary seal, if product is not transferred into or out of the storage tank, emissions are minimized, and the repair is completed within seven calendar days;

(iii) when necessary for supporting a change in service to an incompatible liquid;

(iv) when the storage tank has a storage capacity less than 25,000 gallons;

(v) when the vapors are routed to a control device from the time the storage tank has been emptied to the extent practical or the drain pump loses suction until the floating roof is within 10% by volume of being refloated;

(vi) when all VOC emissions from the storage tank, including emissions from floating roof landings, have been included in an emissions limit or cap approved under Chapter 116 of this title prior to March 1, 2013; or

(vii) when all VOC emissions from floating roof landings at the regulated entity are less than 25 tons per year.

(3) A control device used to comply with this subsection must meet one of the following conditions at all times when VOC vapors are routed to the device.

(A) A control device, other than a vapor recovery unit or a flare, must maintain the following minimum control efficiency:

(i) 90% in the Houston-Galveston-Brazoria area until the date specified in clause (ii) of this subparagraph;

(ii) 95% in the Houston-Galveston-Brazoria area beginning July 20, 2018;

(iii) 95% in the Dallas-Fort Worth area; and

(iv) 95% in the Bexar County area.

(B) A vapor recovery unit must be designed to process all vapor generated by the maximum liquid throughput of the storage tank or the aggregate of storage tanks in a tank battery and must transfer recovered vapors to a pipe or container that is vapor-tight, as defined in §115.10 of this title.

(C) A flare must be designed and operated in accordance with 40 Code of Federal Regulations §60.18(b) - (f) (as amended through December 22, 2008 (73 FR 78209)) and be lit at all times when VOC vapors are routed to the flare.

(4) For a fixed roof storage tank storing condensate prior to custody transfer, flashed gases must be routed to a vapor control system if the condensate throughput of an individual tank or the aggregate of tanks in a tank battery exceeds;

(A) in the Houston-Galveston-Brazoria area, 1,500 barrels (63,000 gallons) per year on a rolling 12-month basis;

(B) in the Dallas-Fort Worth area, except Wise County, 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis until November 7, 2025, upon which date, the requirements in subparagraph (D) of this paragraph apply;

(C) in Wise County:

(i) 6,000 barrels (252,000 gallons) per year on a rolling 12-month basis, until July 20, 2021; and

(ii) 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis until November 7, 2025, upon which date, the requirements in subparagraph (D) of this paragraph apply;

(D) in the Dallas-Fort Worth area, 1,500 barrels (63,000 gallons) per year on a rolling 12-month basis beginning November 7, 2025, as specified in §115.119(f) of this title; and

(E) in the Bexar County area beginning January 1, 2025, through February 28, 2026, 6,000 barrels (252,000 gallons) per year on a rolling 12-month basis.

(F) in the Bexar County area beginning March 1, 2026, 3,000 barrels (126,000 gallons) per year on a rolling 12-month basis.

(5) For a fixed roof storage tank storing crude oil or condensate prior to custody transfer or at a pipeline breakout station, flashed gases must be routed to a vapor control system if the uncontrolled VOC emissions from an individual storage tank, or from the aggregate of storage tanks in a tank battery, or from the aggregate of storage tanks at a pipeline breakout station, equal or exceed:

(A) in the Houston-Galveston-Brazoria area, 25 tons per year on a rolling 12-month basis;

(B) in the Dallas-Fort Worth area, except Wise County: 50 tons per year on a rolling 12-month basis until November 7, 2025, upon which date, the requirements in subparagraph (D) of this paragraph apply;

(C) in Wise County:

(i) 100 tons per year on a rolling 12-month basis, until July 20, 2021;

(ii) 50 tons per year on a rolling 12-month basis beginning July 20, 2021, as specified in §115.119(f) of this title, until November 7, 2025, upon which date, the requirements in subparagraph (D) of this paragraph apply;

(D) in the Dallas-Fort Worth area, 25 tons per year on a rolling 12-month basis beginning November 7, 2025 as specified in §115.119(f) of this title; and

(E) in the Bexar County area 100 tons per year on a rolling 12-month basis prior to March 1, 2026, and 50 tons per year beginning March 1, 2026.

(6) Uncontrolled emissions from a fixed roof storage tank or fixed roof storage tank battery storing crude oil or condensate prior to custody transfer or at a pipeline breakout station must be estimated by one of the following methods. However, if emissions determined using direct measurements or other methods approved by the executive director under subparagraph (A) or (B) of this paragraph are higher than emissions estimated using the default factors or charts in subparagraph (C) or (D) of this paragraph, the higher values must be used.

(A) The owner or operator may make direct measurements using the measuring instruments and methods specified in §115.117 of this title.

(B) The owner or operator may use other test methods or computer simulations approved by the executive director.

(C) The owner or operator may use a factor of 33.3 pounds of VOC per barrel (42 gallons) of condensate produced or 1.6 pounds of VOC per barrel (42 gallons) of oil produced.

(D) For crude oil storage only, the owner or operator may use the chart in Exhibit 2 of the United States Environmental Protection Agency publication *Lessons Learned from Natural Gas Star Partners: Installing Vapor Recovery Units on Crude Oil Storage Tanks,* October 2003, and assuming that the hydrocarbon vapors have a molecular weight of 34 pounds per pound mole and are 48% by weight VOC.

(7) Fixed roof storage tanks in the Bexar County area, Dallas-Fort Worth area, and Houston-Galveston-Brazoria area storing crude oil or condensate prior to custody transfer or at a pipeline breakout station for which the owner or operator is required by this subsection to control flashed gases must be maintained in accordance with manufacturer instructions. All openings in the fixed roof storage tank through which vapors are not routed to a vapor recovery unit or other vapor control device must be equipped with a closure device maintained according to the manufacturer's instructions and operated according to this paragraph. If manufacturer instructions are unavailable, industry standards consistent with good engineering practice can be substituted.

(A) Each closure device must be closed at all times except when normally actuated or required to be open for temporary access or to relieve excess pressure or vacuum in accordance with the manufacturer's design and consistent with good air pollution control practices. Such opening, actuation, or use must be limited to minimize vapor loss.

(B) Each closure device must be properly sealed to minimize vapor loss when closed.

(C) Each closure device must either be latched closed or, if designed to relieve pressure, set to automatically open at a pressure that will ensure all vapors are routed to the vapor recovery unit or other vapor control device under normal operating conditions other than gauging the tank or taking a sample through an open thief hatch.

(D) No closure device may be allowed to have a VOC leak for more than 15 calendar days after the leak is found unless delay of repair is allowed. For the purposes of this subparagraph, a leak is the exuding of process gasses from a closed device based on sight, smell, or sound. If parts are unavailable, repair may be delayed. Parts must be ordered promptly and the repair must be completed within five days of receipt of required parts. Repair may be delayed until the next shutdown if the repair of the component would require a shutdown that would create more emissions than the repair would eliminate. Repair must be completed by the end of the next shutdown.

§115.119. Compliance Schedules.

(a) In Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties, the compliance date has passed and the owner or operator of each storage tank in which any volatile organic compounds (VOC) are placed, stored, or held shall continue to comply with this division except as follows.

(1) The affected owner or operator shall comply with the requirements of §§115.112(d); 115.115(a)(1), (2), (3)(A), and (4); 115.117; and 115.118(a) of this title (relating to Control Requirements; Monitoring Requirements; Approved Test Methods; and Recordkeeping Requirements, respectively) no later than January 1, 2009. Section 115.112(d) of this title no longer applies in the Houston-Galveston-Brazoria area beginning March 1, 2013. Prior to March 1, 2013, the owner or operator of a storage tank subject to §115.112(d) of this title shall continue to comply with §115.112(d) of this title until compliance has been demonstrated with the requirements of §115.112(e)(1) - (6) of this title. Section 115.112(e)(3)(A)(i) of this title no longer applies beginning July 20, 2018.

(A) If compliance with these requirements would require emptying and degassing of the storage tank, compliance is not required until the next time the storage tank is emptied and degassed but no later than January 1, 2017.

(B) The owner or operator of each storage tank with a storage capacity less than 210,000 gallons storing crude oil and condensate prior to custody transfer shall comply with the requirements

of this division no later than January 1, 2009, regardless if compliance with these requirements would require emptying and degassing of the storage tank.

(2) The affected owner or operator shall comply with §§115.112(e)(1) - (6), 115.115(a)(3)(B), (5), and (6), and 115.116 of this title (relating to Testing Requirements) no later than March 1, 2013. Section 115.112(e)(3)(A)(i) of this title no longer applies beginning July 20, 2018. Prior to July 20, 2018, the owner or operator of a storage tank subject to §115.112(e)(3)(A)(i) of this title shall continue to comply with §115.112(e)(3)(A)(i) of this title until compliance has been demonstrated with the requirements of §115.112(e)(3)(A)(ii) of this title. After July 20, 2018, the owner or operator of a storage tank is subject to §115.112(e)(3)(A)(ii) of this title.

(A) If compliance with these requirements would require emptying and degassing of the storage tank, compliance is not required until the next time the storage tank is emptied and degassed but no later than January 1, 2017.

(B) The owner or operator of each storage tank with a storage capacity less than 210,000 gallons storing crude oil and condensate prior to custody transfer shall comply with these requirements no later than March 1, 2013, regardless if compliance with these requirements would require emptying and degassing of the storage tank.

(3) The affected owner or operator shall comply with §§115.112(e)(3)(A)(ii), 115.112(e)(7), 115.118(a)(6)(D) and (E), and 115.114(a)(5) of this title (relating to Inspection and Repair Requirements) as soon as practicable, but no later than July 20, 2018.

(b) In Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties, the owner or operator of each storage tank in which any VOC is placed, stored, or held was required to be in compliance with this division on or before March 1, 2009, and shall continue to comply with this division, except as follows.

(1) The affected owner or operator shall comply with §§115.112(e), 115.115(a)(3)(B), (5), and (6), 115.116, and 115.118(a)(6) of this title as soon as practicable, but no later than March 1, 2013.

(A) If compliance with §115.112(e) of this title would require emptying and degassing of the storage tank, compliance is not required until the next time the storage tank is emptied and degassed but no later than December 1, 2021.

(B) The owner or operator of a storage tank with a storage capacity less than 210,000 gallons storing crude oil and condensate prior to custody transfer shall comply with these requirements no later than March 1, 2013, regardless if compliance with these requirements would require emptying and degassing of the storage tank.

(2) The affected owner or operator in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties shall comply with §§115.112(e)(7), 115.114(a)(5), and 115.118(a)(6)(D) and (E) of this title no later than January 1, 2017.

(c) In Hardin, Jefferson, and Orange Counties, the owner or operator of each storage tank in which any VOC is placed, stored, or held was required to be in compliance with this division by March 7, 1997, and shall continue to comply with this division, except that compliance with §115.115(a)(3)(B), (5), and (6), and §115.116 of this title is required no later than March 1, 2013.

(d) In El Paso County, the owner or operator of each storage tank in which any VOC is placed, stored, or held was required to be in compliance with this division by January 1, 1996, and shall continue to comply with this division, except that compliance with §115.115(a)(3)(B), (5), and (6), and §115.116 of this title is required no later than March 1, 2013.

(e) Except as specified in subsection (g) of this section, in Aransas, Bexar, Calhoun, Gregg, Matagorda, Nueces, San Patricio, Travis, and Victoria Counties, the owner or operator of each storage tank in which any VOC is placed, stored, or held was required to be in compliance with this division by July 31, 1993, and shall continue to comply with this division, except that compliance with §115.116(b) of this title is required as soon as practicable, but no later than March 1, 2013.

(f) In Wise County, the owner or operator of each storage tank in which any VOC is placed, stored, or held was required to be in compliance with this division by January 1, 2017, and shall continue to comply with this division, except that compliance with §115.112(e)(4)(D) and (5)(D) by no later than November 7, 2025.

(g) The owner or operator of each storage tank in the Bexar County area subject to the requirements of this division shall comply with the requirements of §115.112(c) and §115.114(c) of this title through December 31, 2024, and all other applicable requirements of this division no later than January 1, 2025. Beginning March 1, 2026, the owner or operator of each storage tank in the Bexar County area subject to the requirements of this division shall comply with the requirements of §115.112(e)(4)(F), §115.112(e)(5)(E), and all other applicable requirements of this division.

(h) The owner or operator of each storage tank in which any VOC is placed, stored, or held that becomes subject to this division on or after the date specified in subsections (a) - (f) of this section, shall comply with the requirements in this division no later than 60 days after becoming subject. In Brazoria, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, Waller, and Wise Counties, the owner or operator of a storage tank storing crude oil or condensate shall continue to comply with the requirements in this division until compliance with the requirements in Division 7 of this subchapter (relating to Oil and Natural Gas Service in Ozone Nonattainment Areas) is achieved or until December 31, 2022, whichever is sooner.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
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Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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DIVISION 2. VENT GAS CONTROL

30 TAC §115.122, §115.129

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code

within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.122. Control Requirements.

(a) For all persons in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, the following control requirements shall apply.

(1) Any vent gas streams affected by §115.121(a)(1) of this title (relating to Emission Specifications) must be controlled properly with a control efficiency of at least 90% or to a volatile organic compound (VOC) concentration of no more than 20 parts per million by volume (ppmv) (on a dry basis corrected to 3.0% oxygen for combustion devices):

(A) in a direct-flame incinerator at a temperature equal to or greater than 1,300 degrees Fahrenheit;

(B) in a smokeless flare that is lit at all times when VOC vapors are routed to the flare; or

(C) by any other vapor control system, as defined in §115.10 of this title (relating to Definitions). A glycol dehydrator reboiler burning the vent stream from the still vent is a vapor control system.

(2) Any vent gas streams affected by §115.121(a)(2) of this title must be controlled properly with a control efficiency of at least 98% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices):

(A) in a smokeless flare that is lit at all times when VOC vapors are routed to the flare; or

(B) by any other vapor control system, as defined in §115.10 of this title.

(3) For the Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, VOC emissions from each bakery with a bakery oven vent gas stream(s) affected by §115.121(a)(3) of this title shall be reduced as follows.

(A) Each bakery in the Houston-Galveston-Brazoria area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 25 tons per calendar year shall ensure that the overall emission reduction from the uncontrolled VOC emission rate of the oven(s) is at least 80%.

(B) Through November 6, 2025, each bakery in the Dallas-Fort Worth area, except in Wise County, with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 50 tons per calendar year, shall ensure that the overall emission reduction from the uncontrolled VOC emission rate of the oven(s) is at least 80%. Beginning November 7, 2025, each bakery in the Dallas-Fort Worth area, including Wise County, with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 25 tons per calendar year, shall ensure that the overall emission reduction from the uncontrolled VOC emission rate of the oven(s) is at least 80%.

(C) Each bakery in the Dallas-Fort Worth with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 25 tons per calendar year, but less than 50 tons per calendar year, shall reduce total VOC emissions by at least 30% from the bakery's 1990 emissions inventory in accordance with the schedule specified in §115.129(d) of this title (relating to Counties and Compliance Schedules). The requirements of this subparagraph no longer apply beginning November 7, 2025.

(D) Each bakery in the El Paso area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 25 tons per calendar year shall reduce total VOC emissions by at least 30% from the bakery's 1990 emissions inventory in accordance with the schedule specified in §115.129(e) of this title.

(E) Each bakery in the Bexar County area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 100 tons per calendar year, shall ensure that the overall emission reduction from the uncontrolled VOC emission rate of the oven(s) is at least 80%. Beginning March 1, 2026, each bakery in the Bexar County area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 50 tons per calendar year, shall ensure that the overall emission reduction from the uncontrolled VOC emission rate of the oven(s) is at least 80%.

(F) Emission reductions in the 30% to 90% range are not creditable under Chapter 101, Subchapter H, Division 1 of this title (relating to Emission Credit Program) for the following bakeries:

(i) each bakery in the Houston-Galveston-Brazoria area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 25 tons per calendar year;

(ii) each bakery in the Dallas-Fort Worth area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 50 tons per calendar year through November 6, 2025, and 25 tons per calendar year beginning November 7, 2025;

(iii) each bakery in the El Paso area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 50 tons per calendar year; and

(iv) each bakery in the Bexar County area with a total weight of VOC emitted from all bakery ovens on the property, when uncontrolled, equal to or greater than 100 tons per calendar year through February 28, 2026, and 50 tons per calendar year beginning March 1, 2026.

(4) Any vent gas stream that becomes subject to the provisions of paragraphs (1), (2), or (3) of this subsection by exceeding provisions of §115.127(a) of this title (relating to Exemptions) shall remain subject to the provisions of this subsection, even if throughput or emissions later fall below the exemption limits unless and until emissions are reduced to no more than the controlled emissions level existing before implementation of the project by which throughput or

emission rate was reduced to less than the applicable exemption limits in §115.127(a) of this title; and:

(A) the project by which throughput or emission rate was reduced is authorized by any permit or permit amendment or standard permit or permit by rule required by Chapter 116 or Chapter 106 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification; and Permits by Rule). If a permit by rule is available for the project, compliance with this subsection must be maintained for 30 days after the filing of documentation of compliance with that permit by rule; or

(B) if authorization by permit, permit amendment, standard permit, or permit by rule is not required for the project, the owner or operator has given the executive director 30 days' notice of the project in writing.

(b) For all persons in Nueces and Victoria Counties, any vent gas streams affected by §115.121(b) of this title must be controlled properly with a control efficiency of at least 90% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices):

(1) in a direct-flame incinerator at a temperature equal to or greater than 1,300 degrees Fahrenheit;

(2) in a smokeless flare that is lit at all times when VOC vapors are routed to the flare; or

(3) by any other vapor control system, as defined in §115.10 of this title.

(c) For all persons in Aransas, Bexar, Calhoun, Matagorda, San Patricio, and Travis Counties, the following control requirements shall apply. The control requirements of the subsection no longer apply for sources located in Bexar County beginning January 1, 2025.

(1) Any vent gas streams affected by §115.121(c)(1) of this title must be controlled properly:

(A) in a direct-flame incinerator at a temperature equal to or greater than 1,300 degrees Fahrenheit;

(B) in a smokeless flare that is lit at all times when VOC vapors are routed to the flare; or

(C) by any other vapor control system, as defined in §115.10 of this title, with a control efficiency of at least 90% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices).

(2) Any vent gas streams affected by §115.121(c)(2) of this title must be controlled properly:

(A) in a direct-flame incinerator or boiler at a temperature equal to or greater than 1,300 degrees Fahrenheit; or

(B) by any other vapor control system, as defined in §115.10 of this title, with a control efficiency of at least 90% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices).

(3) Any vent gas streams affected by §115.121(c)(3) of this title must be controlled properly:

(A) at a temperature equal to or greater than 1,300 degrees Fahrenheit in an afterburner having a retention time of at least one-fourth of a second, and having a steady flame that is not affected by the cupola charge and relights automatically if extinguished; or

(B) by any other vapor control system, as defined in §115.10 of this title, with a control efficiency of at least 90% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices).

(4) Any vent gas streams affected by §115.121(c)(4) of this title must be controlled properly:

(A) in a smokeless flare that is lit at all times when VOC vapors are routed to the flare or in a combustion device used in a heating process associated with the operation of a blast furnace; or

(B) by any other vapor control system, as defined in §115.10 of this title, with a control efficiency of at least 90% or to a VOC concentration of no more than 20 ppmv (on a dry basis corrected to 3.0% oxygen for combustion devices).

§115.129. Counties and Compliance Schedules.

(a) Except as specified in subsections [~~subsection~~] (g) and (h) of this section, in Aransas, Bexar, Brazoria, Calhoun, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Hardin, Harris, Jefferson, Liberty, Matagorda, Montgomery, Nueces, Orange, San Patricio, Travis, Victoria, and Waller Counties, the compliance date has passed and the owner or operator of each vent gas stream shall continue to comply with existing provisions in this division.

(b) The owner or operator of each bakery in Collin, Dallas, Denton, and Tarrant Counties subject to §115.122(a)(3)(C) of this title (relating to Control Requirements) shall comply with §§115.121(a)(3), 115.122(a)(3)(C), and 115.126(6) of this title (relating to Emission Specifications; Control Requirements; and Monitoring and Recordkeeping Requirements) as soon as practicable, but no later than one year, after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of failure to attain the national ambient air quality standard (NAAQS) for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in Federal Clean Air Act (FCAA), §172(c)(9).

(c) The owner or operator of each bakery in El Paso County subject to §115.122(a)(3)(D) of this title shall comply with §§115.121(a)(3), 115.122(a)(3)(D), and 115.126(6) of this title as soon as practicable, but no later than one year, after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of failure to attain the NAAQS for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in FCAA, §172(c)(9).

(d) The owner or operator of each vent gas stream in Ellis, Johnson, Kaufman, Parker, and Rockwall Counties shall comply with this division as soon as practicable, but no later than March 1, 2009.

(e) The owner or operator of each vent gas stream in Wise County shall comply with this division as soon as practicable, but no later than January 1, 2017.

(f) The owner or operator of a vent gas stream in Bexar, Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties that becomes subject to a new requirement of this division on or after the applicable compliance date in this section shall comply with the requirements in this division as soon as practicable, but no later than 60 days after becoming subject.

(g) The owner or operator of each vent gas stream in the Bexar County area subject to the requirements of this division shall comply with the requirements of §115.121(c), §115.122(c), §115.123(c), and §115.127(c) through December 31, 2024, and all other applicable requirements of this division by no later than January 1, 2025.

(h) The owner or operator of each bakery in the Bexar County area subject to the requirements of this division shall comply with the requirements of §115.122(a)(3)(E) and §115.122(a)(3)(F)(iv) and all

other applicable requirements of this division by no later than March 1, 2026.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER C. VOLATILE ORGANIC COMPOUND TRANSFER OPERATIONS
DIVISION 6. GASOLINE DISPENSING FACILITY

30 TAC §§115.260, 115.262, 115.264 - 115.266, 115.269

Statutory Authority

The new rule sections are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The new rule sections are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed new sections implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.260. Applicability and Definitions.

(a) Applicability. The requirements in this division apply to each gasoline dispensing facility in the Bexar County area. Both "gasoline dispensing facility" and "Bexar County area" are defined in §115.10 of this title (relating to Definitions).

(b) Definitions. Unless specifically defined in the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382) or in §§3.2, 101.1, or 115.10 of this title (relating to Definitions, respectively), the terms in this division have the meanings commonly used in the field of air pollution control. The following meanings apply in this division unless the context clearly indicates otherwise.

(1) Conventional Nozzle--A gasoline dispensing facility pump nozzle that does not have a supplementary vapor recovery pathway and does not have features to control excess liquid releases such as spillage, post fueling drips, and liquid retention.

(2) Dispensing spillage--Spillage that occurs between the time when the dispensing nozzle is inserted into the tank receiving the dispensed liquid and the time when the dispensing nozzle is withdrawn from the tank or container receiving the dispensed liquid and reinserted into the gasoline pump nozzle housing bracket.

(3) Enhanced Conventional (ECO) Nozzle--A gasoline dispensing facility pump nozzle certified by California Air Resources Board (CARB) CP-207 dated July 12, 2021, (including updates and revisions) and listed on the CARB Executive Officer's Exhibit 1 "Component List" in CARB Executive Order NVR-1-F, "Relating to Certification of Non-Vapor Recovery Hoses and Enhanced Conventional Nozzles, For Use at Gasoline Dispensing Facilities with No Phase II Vapor Recovery Systems," executed February 18, 2021, including updates and revisions.

(4) Gasoline dispenser--Equipment at a gasoline dispensing facility, as defined in §115.10 of this title, that provides a connection and sufficient hydraulic force to transfer gasoline or a gasoline and ethanol mixture from a storage tank into motor vehicles.

(5) Low permeation hose--A hose used to dispense gasoline that is included by the CARB Executive Officer on the Exhibit 1 "Component List" in CARB Executive Order NVR-1-D, "Relating to Certification of Non-Vapor Recovery Hoses and Enhanced Conventional Nozzles, For Use at Gasoline Dispensing Facilities with No Phase II Vapor Recovery Systems, " executed March 1, 2019, and complies with the permeation performance standard in CARB CP-207 dated July 12, 2021, (including updates and revisions) as determined by UL 330 (seventh edition), including updates and revisions.

(6) Malfunctioning equipment--Equipment that is not operating according to the manufacturer's design or specifications.

§115.262. Control Requirements.

(a) Installation and use. The owner or operator of a gasoline dispenser equipment shall install low permeation hoses, as defined in §115.260(b) of this title (relating to Definitions), and enhanced conventional (ECO) nozzles, as defined in §115.260(b) of this title, on each affected gasoline dispenser as follows:

(1) All hoses dispensing gasoline or a gasoline and ethanol mixture must be low permeation hoses that permeate at a rate of no more than 10.0 grams per square meter per day ($g/m^2/day$). This requirement exists for all hoses after the compliance date in §115.269(a) of this title (relating to Compliance Schedules).

(2) The owner or operator shall install ECO nozzles, as defined in §115.260(b) of this title, on each gasoline dispenser pump that becomes subject to this division by the compliance date in §115.269 of this title.

(b) Work Practices. The owner or operator of a gasoline dispensing facility shall not allow gasoline to be handled in a manner that would result in preventable vapor releases to the atmosphere for extended periods of time by implementing the following work practices:

(1) Implement and document spill prevention procedures.

(2) Prominently display the operating instructions for the gasoline dispensing system in the gasoline dispensing area and ensure

instructions are clearly visible and legible to all customers. The operating instructions must include the following information:

(A) A clear, step by step description of how to correctly dispense gasoline with the nozzles used at the site using simple language and, if possible, visual aids; and

(B) An overfill warning to clearly state that continued attempts to dispense gasoline after the gasoline dispensing system indicates that the motor vehicle fuel tank is full may result in spillage and unnecessary air and water quality contamination.

(3) Establish and maintain a policy to not top off or overfill vehicle tanks or containers. Post sign(s) at the gasoline dispensing facility instructing a person filling up a motor vehicle to not top off the vehicle tank. A sign must be placed on each gasoline dispenser, or on a permanent fixture within six feet of the dispenser and be clearly visible to an individual using the hose and nozzle to dispense gasoline. Cover all gasoline storage tank fill-pipes with a gasketed seal when not in use.

(4) Clean up spills as expeditiously as practicable. The owner or operator must develop a written plan that describes how a spill will be cleaned up upon occurrence. The plan must include, but is not limited to, where spill materials are located, a brief description of how each is used, and an explanation of how the owner or operator is implementing the 'as expeditiously as practicable' requirement.

(5) Minimize gasoline sent to open waste collection systems that collect and transport gasoline to reclamation and recycling devices, such as an oil/water separator.

(6) Provide adequate training and written instructions to gasoline dispensing facility operators and employees to ensure proper vehicle and container filling operations do not result in excessive or preventable gasoline spillage.

(7) Follow manufacturer's maintenance recommendations for all gasoline dispenser equipment to minimize gasoline spillage.

(c) Repair. Immediately remove from service and tag any gasoline dispensing system equipment identified during the inspection required by §115.264 of this title (relating to Monitoring and Inspection Requirements) as malfunctioning equipment until it is successfully repaired or replaced. Repair or replace any malfunctioning equipment identified as soon as possible before the next inspection required by §115.264 to minimize spillage.

(1) A component removed from service may not be returned to service until the malfunction is corrected.

(2) If the Executive Director or a designated representative finds during an inspection that a damaged or malfunctioning nozzle or other component of the gasoline dispensing system is not properly tagged, the component may not be returned to service until the defect is corrected.

§115.264. Monitoring and Inspection Requirements.

The owner or operator of gasoline dispenser equipment shall perform monthly inspections to check all of the following:

(1) Gasoline hoses are intact (no tears or holes).

(2) Gasoline nozzles function according to their design.

(3) Gasoline hoses are not touching the ground when the nozzle is resting on its holding bracket.

(4) Each gasoline nozzle fits securely in its holding bracket.

(5) Identify and document evidence of nozzle, hose, or other gasoline dispenser system leakage and the cause.

§115.265. Testing and Certification Requirements.

The following gasoline dispensing facility testing and certification requirements shall apply for the Bexar County area, as defined in §115.10 of this title (relating to Definitions).

(1) Test methods in UL 330 - Underwriters Laboratories' Standard for Hose and Hose Assemblies for Dispensing Flammable Liquids must be used to determine compliance with the low permeation hose limit in §115.262(a)(1) of this title (relating to Control Requirements).

(2) Each enhanced conventional nozzle subject to §115.262(b)(1) and (2) of this title must meet certification and test requirements in the California Air Resources Board (CARB) Certification Procedure for Enhanced Conventional (ECO) Nozzles and Low Permeation Conventional Hoses for Use at Gasoline Dispensing Facilities CP-207, dated July 12, 2021, including updates and revisions.

§115.266. Recordkeeping Requirements.

The owner or operator of gasoline dispensing facility equipment shall keep the following records.

(1) Records with the following information, as applicable, for each monitoring inspection conducted under subsection §115.264 of this title (relating to Monitoring and Inspection Requirements):

(A) The name of the person performing the inspection;

(B) The components inspected under subsection §115.264 of this title;

(C) The date the inspection was performed;

(D) The result of each inspection and repair of the components under §115.264 and §115.262(c) of this title (relating to Control Requirements), respectively;

(E) The name of the person making the correction or repair to the malfunctioning or failed component;

(F) The date the correction or repair was made to the malfunctioning or failed component; and

(G) The action taken to correct or repair the malfunctioning equipment.

(2) Records certifying the low permeation hoses and enhanced conventional nozzles.

(3) The owner or operator shall maintain on-site at the gasoline dispensing facility, or electronically stored allowing for on-site examination, a copy of the training schedule and written instructions required under §115.262(b) of this title.

(4) The owner or operator shall maintain all monitoring records for at least five years and make them available for review upon request by authorized representatives of the executive director, U.S. Environmental Protection Agency, or local air pollution control agencies with jurisdiction.

§115.269. Compliance Schedules.

(a) The owner or operator of gasoline dispenser equipment in Bexar County shall comply with the requirements of this division by no later than March 1, 2026.

(b) The owner or operator of gasoline dispenser equipment that becomes subject to this division after March 1, 2026, shall comply with the requirements of this division by no later than 60 days after becoming subject.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER E. SOLVENT-USING PROCESSES

DIVISION 1. DEGREASING PROCESSES

30 TAC §§115.411, 115.412, 115.415, 115.416, 115.419

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.411. Exemptions.

(a) The following exemptions apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Bastrop, Caldwell, Comal, Gregg, Guadalupe, Hays, Nueces, Travis, Victoria, Williamson, and Wilson Counties. The exemptions in this subsection are no longer available for an operation subject to §115.412(b) of this title (relating to Control Requirements) in the Dallas-Fort Worth area or §115.412(c) of this title in the Houston-Galveston-Brazoria area as of the compliance date specified in §115.419(f) or §115.419(g), respectively, of this title (relating to Counties and Compliance Schedules). Beginning March 1, 2026, the exemptions in this subsection are no longer available for an operation subject to §115.412(d) of this title in Bexar County.

(1) Any cold solvent cleaning system is exempt from the provisions of §115.412(a)(1)(B) of this title and may use an external drainage facility in place of an internal type drainage system, if the true vapor pressure of the solvent is less than or equal to 0.6 pounds per square inch absolute (psia) (4.1 kilo Pascals (kPa)) as measured at 100 degrees Fahrenheit (38 degrees Celsius) or if a cleaned part cannot fit into an internal drainage facility.

(2) The following are exempt from the requirements of §115.412(a)(1)(E) of this title:

(A) a cold solvent cleaning system for which the true vapor pressure of the solvent is less than or equal to 0.6 psia (4.1 kPa) as measured at 100 degrees Fahrenheit (38 degrees Celsius), provided that the solvent is not heated above 120 degrees Fahrenheit (49 degrees Celsius); and

(B) remote reservoir cold solvent cleaners.

(3) Any conveyorized degreaser with less than 20 square feet (ft^2) (2 square meters (m^2)) of air/vapor interface is exempt from the requirement of §115.412(a)(3)(A) of this title.

(4) An owner or operator who operates a remote reservoir cold solvent cleaner that uses solvent with a true vapor pressure equal to or less than 0.6 psia (4.1 kPa) measured at 100 degrees Fahrenheit (38 degrees Celsius) and that has a drain area less than 16 square inches (in^2) (100 square centimeters (cm^2)) and who properly disposes of waste solvent in enclosed containers is exempt from §115.412(a)(1) of this title.

(5) In Gregg, Nueces, and Victoria Counties, degreasing operations located on any property that can emit, when uncontrolled, a combined weight of volatile organic compounds (VOC) less than 550 pounds in any consecutive 24-hour period are exempt from the provisions of §115.412 of this title.

(b) If the commission publishes notice in the *Texas Register*, as provided in §115.419(f) of this title for the Dallas-Fort Worth area and/or §115.419(g) of this title for the Houston-Galveston-Brazoria area, to require compliance with the contingency measure control requirements of §115.412(b) of this title for the Dallas-Fort-Worth area and/or §115.412(c) of this title for the Houston-Galveston-Brazoria area, then the following exemptions apply in the applicable area as of the compliance date specified in §115.419(f) or (g) of this title.

(1) Any cold solvent cleaning system is exempt from the provisions of §115.412(a)(1)(B) of this title and may use an external drainage facility in place of an internal type drainage system if the VOC content of the solvent is less than or equal to 25 grams per liter (g/l) or if a cleaned part cannot fit into an internal drainage facility.

(2) The following are exempt from the requirements of §115.412(a)(1)(E) of this title:

(A) a cold solvent cleaning system for which the VOC content of the solvent is less than or equal to 25 g/l; and

(B) remote reservoir cold solvent cleaners.

(3) An owner or operator who operates a remote reservoir cold solvent cleaner that uses solvent with a VOC content that is less than or equal to 25 g/l and that has a drain area less than 16 (in^2) (100 (cm^2)) and who properly disposes of waste solvent in enclosed containers is exempt from §115.412(a)(1) of this title.

(c) Beginning March 1, 2026, the following exemptions apply in Bexar County.

(1) Any cold solvent cleaning system is exempt from the provisions of §115.412(a)(1)(B) of this title and may use an external drainage facility in place of an internal type drainage system if the VOC content of the solvent is less than or equal to 25 g/l or if a cleaned part cannot fit into an internal drainage facility.

(2) The following are exempt from the requirements of §115.412(a)(1)(E) of this title:

(A) a cold solvent cleaning system for which the VOC content of the solvent is less than or equal to 25 g/l; and

(B) remote reservoir cold solvent cleaners.

(3) An owner or operator who operates a remote reservoir cold solvent cleaner that uses solvent with a VOC content that is less than or equal to 25 g/l and that has a drain area less than 16 square inches (in^2) (100 square centimeters (cm^2)) and who properly disposes of waste solvent in enclosed containers is exempt from §115.412(a)(1) of this title.

§115.412. Control Requirements.

(a) In the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas as defined in §115.10 of this title (relating to Definitions) and in Gregg, Nueces, Victoria, Comal, Guadalupe, Wilson, Bastrop, Caldwell, Hays, Travis, and Williamson Counties, the following control requirements shall apply.

(1) Cold solvent cleaning. No person shall own or operate a system utilizing a volatile organic compound (VOC) for the cold solvent cleaning of objects without the following controls.

(A) A cover shall be provided for each cleaner which shall be kept closed whenever parts are not being handled in the cleaner. The cover shall be designed for easy one-handed operation if any of the following exists:

(i) the true vapor pressure of the solvent is greater than 0.3 psia (2 kPa) as measured at 100 degrees Fahrenheit (38 degrees Celsius);

(ii) the solvent is agitated; or

(iii) the solvent is heated.

(B) An internal cleaned-parts drainage facility, for enclosed draining under a cover, shall be provided for all cold solvent cleaners.

(C) A permanent label summarizing the operating requirements in subparagraph (F) of this paragraph shall be attached to the cleaner in a conspicuous location near the operator.

(D) If a solvent spray is used, it must be a solid fluid stream (not a fine, atomized, or shower-type spray) and at an operating pressure of 10 [~~ten~~] psig or less as necessary to prevent splashing above the acceptable freeboard.

(E) The system shall be equipped with a freeboard that provides a ratio equal to or greater than 0.7, or a water cover (solvent must be insoluble in and heavier than water). To determine the freeboard ratio, the freeboard height measurement is taken from the top of the degreaser to the top of the air/solvent level. This number is then divided by the smallest width measurement. The width measurement is taken at the smallest interior dimension. This dimension could be located at any point, from the top or opening of the unit to the air/solvent level.

(F) The operating procedures shall be as follows.

(i) Waste solvent shall not be disposed of or transferred to another party such that the waste solvent can evaporate into the atmosphere. Waste solvents shall be stored only in covered containers.

(ii) The degreaser cover shall be kept closed whenever parts are not being handled in the cleaner.

(iii) Parts shall be drained for at least 15 seconds or until dripping ceases.

(iv) Porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(2) Open-top vapor degreasing. No person shall own or operate a system utilizing a VOC for the open-top vapor degreasing of objects without the following controls:

(A) a cover that can be opened and closed easily without disturbing the vapor zone;

(B) the following devices which will automatically shut off the sump heat:

(i) a condenser coolant flow sensor and thermostat which will detect if the condenser coolant is not circulating or if the condenser coolant temperature exceeds the solvent manufacturer's recommendations;

(ii) a solvent level sensor which will detect if the solvent level drops below acceptable design limits; and

(iii) a vapor level sensor which will detect if the vapor level rises above acceptable design limits;

(C) a spray safety switch which will shut off the spray pump to prevent spraying above the vapor level;

(D) one of the following controls:

(i) a freeboard that provides a ratio equal to or greater than 0.75 and, if the degreaser opening is greater than 10 ft^2 (1m^2 [~~2~~]), a powered cover. To determine the freeboard ratio, the freeboard height measurement is taken from the top of the degreaser to the top of the air/vapor level. This number is then divided by the smallest width measurement. The width measurement is taken at the smallest interior dimension. This dimension could be located at any point, from the top or opening of the unit to the air/vapor level;

(ii) a properly sized refrigerated chiller capable of achieving 85% or greater control of VOC emissions;

(iii) an enclosed design where the cover or door opens only when the dry part is actually entering or exiting the degreaser; or

(iv) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 (15m^3 [~~3~~]/min per m^2) of air/vapor area (with the cover open) and exhausting less than 25 ppm of solvent by volume averaged over one complete adsorption cycle;

(E) a permanent, conspicuous, label summarizing the operating procedures listed in subparagraph (F) of this paragraph; and

(F) the following operating procedures:

(i) the cover shall be closed at all times except when processing work loads through the degreaser;

(ii) parts shall be positioned so that complete drainage is obtained;

(iii) parts shall be moved in and out of the degreaser at less than 11 ft/min (3.3 m/min);

(iv) the work load shall be retained in the vapor zone at least 30 seconds or until condensation ceases;

(v) any pools of solvent on the cleaned parts shall be removed by tipping the part before withdrawing it from the vapor zone;

(vi) parts shall be allowed to dry within the degreaser freeboard area for at least 15 seconds or until visually dry;

(vii) porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased;

(viii) work loads shall not occupy more than half of the degreaser open top surface area;

(ix) solvent shall not be sprayed above the vapor level;

(x) solvent leaks shall be repaired immediately, or the degreaser shall be shut down until repairs are made;

(xi) waste solvent shall not be disposed of or transferred to another party such that the waste solvent will evaporate into the atmosphere. Waste solvent shall be stored only in covered containers;

(xii) exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cfm per ft^2 [~~2~~] (20 m^3/min per m^2) of degreaser open area, unless necessary to meet Occupational Safety and Health Administration (OSHA) requirements or unless a carbon adsorption system is installed as a major control device. Ventilation fans or other sources of air agitation shall not be used near the degreaser opening; and

(xiii) water shall not be visibly detectable in the solvent exiting the water separator.

(3) Conveyorized degreasing. No person shall own or operate a system utilizing a VOC for the conveyorized cleaning of objects without the following controls:

(A) one of the following major control devices:

(i) a properly sized refrigerated chiller capable of achieving 85% or greater control of VOC emissions; or

(ii) a carbon adsorption system with ventilation equal to or greater than 50 cfm/ft^2 (15 m^3 [~~3~~]/min/m^2 [~~2~~]) of air/vapor area (when downtime covers are open) and exhausting less than 25 ppm of solvent by volume averaged over one complete adsorption cycle;

(B) a drying tunnel or other means, such as rotating (tumbling) basket if space is available, to prevent solvent liquid or vapor carry-out;

(C) a condenser flow switch and thermostat which will shut off sump heat if the condenser coolant is not circulating or if the condenser coolant discharge temperature exceeds the solvent manufacturer's recommendation;

(D) a spray safety switch which will shut off the spray pump if the vapor level drops more than four inches (10 [~~ten~~] cm);

(E) a vapor level control thermostat which will shut off the sump heat when the vapor level rises above the designed operating level;

(F) entrances and exits which silhouette work loads so that the average clearance (between parts and edge of the degreaser opening) is either less than four inches (10 [~~ten~~] cm) or less than 10% of the width of the opening;

(G) downtime covers which close off the entrance and exit during nonoperating hours;

(H) a permanent, conspicuous label near the operator summarizing the operating requirements in subparagraph (I) of this paragraph; and

(I) the following operating procedures:

(i) exhaust ventilation for systems other than those which vent to a major control device shall not exceed 65 cfm/ft^2 (20 m^3/min/m^2) of degreaser opening, unless necessary to meet OSHA requirements or unless a carbon adsorption system is installed as a major control device. Ventilation fans shall not be used near the degreaser opening;

(ii) parts shall be positioned so that complete drainage is obtained;

(iii) vertical conveyor speed shall be maintained at less than 11 ft/min (3.3 m/min);

(iv) waste solvent shall not be disposed of, or transferred to another party, such that the waste solvent can evaporate into the atmosphere. Waste solvent shall be stored only in covered containers;

(v) leaks shall be repaired immediately or the degreaser shall be shut down until repairs are made;

(vi) water shall not be visibly detectable in the solvent exiting the water separator;

(vii) downtime covers shall be placed over entrances and exits of conveyorized degreasers immediately after the conveyor and exhaust are shut down and removed just before they are started up; and

(viii) porous or absorbent materials, such as cloth, leather, wood, or rope, shall not be degreased.

(b) In accordance with the compliance schedule for contingency requirements in §115.419(f) of this title (relating to Counties and Compliance Schedules), and in addition to the requirements of subsection (a) of this section, no person in the Dallas-Fort Worth area shall own or operate a system for the cold solvent cleaning, open-top vapor degreasing, or conveyorized degreasing of objects using a solvent with a VOC content greater than 25 grams per liter (g/l).

(c) In accordance with the compliance schedule for contingency requirements in §115.419(g) of this title, and in addition to the requirements of subsection (a) of this section, no person in the Houston-Galveston-Brazoria area shall own or operate a system for the cold solvent cleaning, open-top vapor degreasing, or conveyorized degreasing of objects using a solvent with a VOC content greater than 25 g/l.

(d) In addition to the requirements of subsection (a) of this section, beginning March 1, 2026, no person in the Bexar County area shall own or operate a system for cold solvent cleaning, open-top vapor degreasing, or conveyorized degreasing of objects using a solvent with a VOC content greater than 25 g/l.

§115.415. Testing Requirements.

The testing requirements for degreasing processes in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Bastrop, Caldwell, Comal, Gregg, Guadalupe, Hays, Nueces, Travis, Victoria, Williamson, and Wilson Counties are as follows.

(1) Compliance with §115.412(a)(1) of this title (relating to Control Requirements) must be determined by applying the following test methods, as applicable:

(A) determination of true vapor pressure using ASTM International Test Method D323 [~~D323-89~~], ASTM Test Method D2879, ASTM Test Method D4953, ASTM Test Method D5190, or ASTM Test Method D5191 for the measurement of Reid vapor pressure, adjusted for actual storage temperature in accordance with American Petroleum Institute Publication 2517, Third Edition, 1989;

(B) minor modifications to the test methods and procedures listed in subparagraph (A) of this paragraph that are approved by the executive director.;

(C) using standard reference materials for the true vapor pressure of each volatile organic compound component; or

(D) using analytical data from the solvent supplier or manufacturer's material safety data sheet.

(2) Compliance with §115.412(a)(2)(D)(iv) and (a)(3)(A)(ii) of this title and §115.413(3) of this title (relating to Alternate Control Requirements) must be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 Code of Federal Regulations (CFR) Part 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 18 (40 CFR Part 60, Appendix A) for determining gaseous organic compound emissions by gas chromatography;

(C) Test Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(D) Test Methods 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis; or

(E) minor modifications to these test methods and procedures approved by the executive director.

(3) Compliance with §115.412(b), [~~and~~] (c), and (d) of this title must be determined by applying the following test methods, as applicable:

(A) Method 24 (40 CFR Part 60, Appendix A); or

(B) additional test procedures described in 40 CFR §60.446 (as amended through October 17, 2000 (65 *Federal Register* 61761)).

(4) Test methods other than those specified in paragraphs (1) - (3) of this section may be used if validated by 40 CFR Part 63, Appendix A, Test Method 301. For the purposes of this paragraph, substitute "executive director" each place that Test Method 301 references "administrator."

§115.416. Recordkeeping Requirements.

The owner or operator of each degreasing process in Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Bastrop, Caldwell, Comal, Gregg, Guadalupe, Hays, Nueces, Travis, Victoria, Williamson, and Wilson Counties shall maintain the following records at the facility for at least two years and shall make such records available upon request to representatives of the executive director, the United States Environmental Protection Agency, or the local air pollution control agency having jurisdiction in the area:

(1) a record of control equipment maintenance, such as replacement of the carbon in a carbon adsorption unit;

(2) the results of all tests conducted at the facility in accordance with the requirements described in §115.415(2) and (3) of this title (relating to Testing Requirements);

(3) for each degreasing process in Gregg, Nueces, and Victoria Counties which is exempt under §115.411(a)(5) of this title (relating to Exemptions), records of solvent usage in sufficient detail to document continuous compliance with this exemption;

(4) for each degreasing process in the Dallas-Fort Worth area, records sufficient to demonstrate continuous compliance with:

(A) the vapor pressure testing described in §115.415(1)(A) - (D) of this title; and

(B) the applicable exemptions in §115.411 of this title

(5) for each degreasing process in the Bexar County area, records sufficient to demonstrate continuous compliance with:

(A) the volatile organic compound testing described in §115.415(3) of this title; and

(B) the applicable exemptions in §115.411 of this title.

§115.419. Counties and Compliance Schedules.

(a) In [~~Bexar,~~] Brazoria, Chambers, Collin, Dallas, Denton, El Paso, Fort Bend, Galveston, Gregg, Hardin, Harris, Jefferson, Liberty, Montgomery, Nueces, Orange, Tarrant, Victoria, and Waller, Counties, the compliance date has passed and all affected persons shall continue to comply with this division.

(b) All affected persons in Bastrop, Caldwell, Comal, Guadalupe, Hays, Travis, Williamson, and Wilson Counties shall comply with this division as soon as practicable, but no later than December 31, 2005.

(c) All affected persons in Ellis, Johnson, Kaufman, Parker, and Rockwall Counties shall comply with this division as soon as practicable, but no later than March 1, 2009.

(d) All affected persons of a degreasing process in Wise County shall comply with this division as soon as practicable, but no later than January 1, 2017.

(e) All affected persons of a degreasing process in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties that becomes subject to this division on or after the applicable compliance date in subsection (a), (c), or (d) of this section shall comply with the requirements in this division as soon as practicable, but no later than 60 days after becoming subject.

(f) All affected owners or operators of a degreasing process in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties shall be in compliance with §115.412(b) of this title (relating to Control Requirements) by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failed to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

(g) All affected owners or operators of a degreasing process in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties shall be in compliance with §115.412(c) of this title by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failed to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

(h) The owner or operator of a degreasing process or operation in the Bexar County area subject to the requirements of this division shall comply with the requirements of this division, except §115.412(d) of this title, by no later than January 1, 2025. Beginning March 1, 2026, the owner or operator of a degreasing process or operation in the Bexar County area subject to the requirements of this division shall comply with §115.412(d). All affected persons of a degreasing process or op-

eration in the Bexar County area that becomes subject to this division on or after the applicable compliance date in this subsection shall comply with the requirements of this division [~~by but~~] no later than 60 days after becoming subject.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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DIVISION 2. SURFACE COATING PROCESSES

30 TAC §§115.420, 115.421, 115.425, 115.427, 115.429

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.420. Applicability and Definitions.

(a) Applicability. The owner or operator of a surface coating process in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), and in Gregg, Nueces, and Victoria Counties, as specified in each paragraph below, is subject to this division. All owners and operators shall be in compliance with this division in accordance with the compliance schedules listed in §115.429 of this title (relating to Counties and Compliance Schedules).

(1) Large appliance coating. The requirements in this division apply in the Beaumont-Port Arthur and El Paso areas and in Gregg, Nueces, and Victoria Counties.

(2) Metal furniture coating. The requirements in this division apply in the Beaumont-Port Arthur and El Paso areas and in Gregg, Nueces, and Victoria Counties.

(3) Coil coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties.

(4) Paper coating. The requirements in this division apply in the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties. In the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, applicability is determined by the volatile organic compound (VOC) emissions from each individual paper coating line.

(A) Each paper coating line in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas that has the potential to emit less than 25 tons per year (tpy) of VOC is subject to this division.

(B) Each paper coating line in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas that has the potential to emit equal to or greater than 25 tpy of VOC is subject to the requirements in Division 5 of this Subchapter (relating to Control Requirements for Surface Coating Processes).

(5) Fabric coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties.

(6) Vinyl coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, and in Gregg, Nueces, and Victoria Counties.

(7) Can coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, and in Gregg, Nueces, and Victoria Counties.

(8) Automobile and light-duty truck coating. The requirements in this division apply in the Beaumont-Port Arthur, El Paso, and Houston-Galveston-Brazoria areas.

(9) Vehicle refinishing coating (body shops). The requirements in this division apply in the Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas.

(10) Miscellaneous metal parts and products coating. The requirements in this division apply in the Beaumont-Port Arthur and El Paso areas and in Gregg, Nueces, and Victoria Counties. In the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, the requirements in this division apply only to designated on-site maintenance shops as specified in §115.427(8) of this title (relating to Exemptions).

(11) Factory surface coating of flat wood paneling. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties.

(12) Aerospace coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties.

(13) Mirror backing coating. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth El Paso, and Houston-Galveston-Brazoria areas.

(14) Wood parts and products coating. The requirements in this division apply in the Bexar County, Dallas-Fort Worth El Paso, and Houston-Galveston-Brazoria areas.

(15) Wood furniture manufacturing coatings. The requirements in this division apply in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas.

(16) Marine coatings. The requirements in this division apply in the Beaumont-Port Arthur and Houston-Galveston-Brazoria areas.

(b) General surface coating definitions. The following terms, when used in this division have the following meanings, unless the context clearly indicates otherwise. Additional definitions for terms used in this division are found in §§3.2, 101.1, and 115.10 of this title (relating to Definitions).

(1) Aerosol coating (spray paint)--A hand-held, pressurized, nonrefillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

(2) Coating--A material applied onto or impregnated into a substrate for protective, decorative, or functional purposes. Such materials include, but are not limited to, paints, varnishes, sealants, adhesives, thinners, diluents, inks, maskants, and temporary protective coatings.

(3) Coating application system--Devices or equipment designed for the purpose of applying a coating material to a surface. The devices may include, but are not be limited to, brushes, sprayers, flow coaters, dip tanks, rollers, knife coaters, and extrusion coaters.

(4) Coating line--An operation consisting of a series of one or more coating application systems and including associated flashoff area(s), drying area(s), and oven(s) wherein a surface coating is applied, dried, or cured.

(5) Coating solids (or solids)--The part of a coating that remains after the coating is dried or cured.

(6) Daily weighted average--The total weight of volatile organic compound (VOC) emissions from all coatings subject to the same emission standard in §115.421 of this title (relating to Emission Specifications), divided by the total volume of those coatings (minus water and exempt solvent) delivered to the application system each day. Coatings subject to different emission standards in §115.421 of this title must not be combined for purposes of calculating the daily weighted average. In addition, determination of compliance is based on each individual coating line.

(7) High-volume low-pressure spray guns--Equipment used to apply coatings by means of a spray gun which operates between 0.1 and 10.0 pounds per square inch gauge air pressure at the air cap.

(8) Normally closed container--A container that is closed unless an operator is actively engaged in activities such as adding or removing material.

(9) Pounds of VOC per gallon of coating (minus water and exempt solvents)--Basis for emission limits for surface coating processes. Can be calculated by the following equation:
Figure: 30 TAC §115.420(b)(9) (No change.)

(10) Pounds of VOC per gallon of solids--Basis for emission limits for surface coating process. Can be calculated by the following equation:
Figure: 30 TAC §115.420(b)(10) (No change.)

(11) Spray gun--A device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

(12) Surface coating processes--Operations which utilize a coating application system.

(13) Transfer efficiency--The amount of coating solids deposited onto the surface of a part or product divided by the total amount of coating solids delivered to the coating application system.

(c) Specific surface coating definitions. The following terms, when used in this division, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Aerospace coating.

(A) Ablative coating--A coating that chars when exposed to open flame or extreme temperatures, as would occur during the failure of an engine casing or during aerodynamic heating. The ablative char surface serves as an insulative barrier, protecting adjacent components from the heat or open flame.

(B) Adhesion promoter--A very thin coating applied to a substrate to promote wetting and form a chemical bond with the subsequently applied material.

(C) Adhesive bonding primer--A primer applied in a thin film to aerospace components for the purpose of corrosion inhibition and increased adhesive bond strength by attachment. There are two categories of adhesive bonding primers: primers with a design cure at 250 degrees Fahrenheit or below and primers with a design cure above 250 degrees Fahrenheit.

(D) Aerospace vehicle or component--Any fabricated part, processed part, assembly of parts, or completed unit, with the exception of electronic components, of any aircraft including but not limited to airplanes, helicopters, missiles, rockets, and space vehicles.

(E) Aircraft fluid systems--Those systems that handle hydraulic fluids, fuel, cooling fluids, or oils.

(F) Aircraft transparency--The aircraft windshield, canopy, passenger windows, lenses, and other components which are constructed of transparent materials.

(G) Antichafe coating--A coating applied to areas of moving aerospace components that may rub during normal operations or installation.

(H) Antique aerospace vehicle or component--An aerospace vehicle or component thereof that was built at least 30 years ago. An antique aerospace vehicle would not routinely be in commercial or military service in the capacity for which it was designed.

(I) Aqueous cleaning solvent--A solvent in which water is at least 80% by volume of the solvent as applied.

(J) Bearing coating--A coating applied to an antifriction bearing, a bearing housing, or the area adjacent to such a bearing in order to facilitate bearing function or to protect base material from excessive wear. A material shall not be classified as a bearing coating if it can also be classified as a dry lubricative material or a solid film lubricant.

(K) Bonding maskant--A temporary coating used to protect selected areas of aerospace parts from strong acid or alkaline solutions during processing for bonding.

(L) Caulking and smoothing compounds--Semi-solid materials which are applied by hand application methods and are used to aerodynamically smooth exterior vehicle surfaces or fill cavities such as bolt hole accesses. A material shall not be classified as a caulking and smoothing compound if it can also be classified as a sealant.

(M) Chemical agent-resistant coating--An exterior topcoat designed to withstand exposure to chemical warfare agents or the decontaminants used on these agents.

(N) Chemical milling maskant--A coating that is applied directly to aluminum components to protect surface areas when chemically milling the component with a Type I or II etchant. Type I chemical milling maskants are used with a Type I etchant and Type II chemical milling maskants are used with a Type II etchant. This definition does not include bonding maskants, critical use and line sealer maskants, and seal coat maskants. Additionally, maskants that must be used with a combination of Type I or II etchants and any of the above types of maskants (i.e., bonding, critical use and line sealer, and seal coat) are not included. Maskants that are defined as specialty coatings are not included under this definition.

(O) Cleaning operation--Spray-gun, hand-wipe, and flush cleaning operations.

(P) Cleaning solvent--A liquid material used for hand-wipe, spray gun, or flush cleaning. This definition does not include solutions that contain no VOC.

(Q) Clear coating--A transparent coating usually applied over a colored opaque coating, metallic substrate, or placard to give improved gloss and protection to the color coat.

(R) Closed-cycle depainting system--A dust free, automated process that removes permanent coating in small sections at a time, and maintains a continuous vacuum around the area(s) being depainted to capture emissions.

(S) Coating operation--Using a spray booth, tank, or other enclosure or any area (such as a hangar) for applying a single type of coating (e.g., primer); using the same spray booth for applying another type of coating (e.g., topcoat) constitutes a separate coating operation for which compliance determinations are performed separately.

(T) Coating unit--A series of one or more coating applicators and any associated drying area and/or oven wherein a coating is applied, dried, and/or cured. A coating unit ends at the point where the coating is dried or cured, or prior to any subsequent application of a different coating.

(U) Commercial exterior aerodynamic structure primer--A primer used on aerodynamic components and structures that protrude from the fuselage, such as wings and attached components, control surfaces, horizontal stabilizers, vertical fins, wing-to-body fairings, antennae, and landing gear and doors, for the purpose of extended corrosion protection and enhanced adhesion.

(V) Commercial interior adhesive--Materials used in the bonding of passenger cabin interior components. These components must meet the Federal Aviation Administration (FAA) fireworthiness requirements.

(W) Compatible substrate primer--Either compatible epoxy primer or adhesive primer. Compatible epoxy primer is primer that is compatible with the filled elastomeric coating and is epoxy based. The compatible substrate primer is an epoxy-polyamide primer used to promote adhesion of elastomeric coatings such as impact-resistant coatings. Adhesive primer is a coating that:

(i) inhibits corrosion and serves as a primer applied to bare metal surfaces or prior to adhesive application; or

(ii) is applied to surfaces that can be expected to contain fuel. Fuel tank coatings are excluded from this category.

(X) Confined space--A space that:

(i) is large enough and so configured that a person can bodily enter and perform assigned work;

(ii) has limited or restricted means for entry or exit (for example, fuel tanks, fuel vessels, and other spaces that have limited means of entry); and

(iii) is not suitable for continuous occupancy.

(Y) Corrosion prevention compound--A coating system or compound that provides corrosion protection by displacing water and penetrating mating surfaces, forming a protective barrier between the metal surface and moisture. Coatings containing oils or waxes are excluded from this category.

(Z) Critical use and line sealer maskant--A temporary coating, not covered under other maskant categories, used to protect selected areas of aerospace parts from strong acid or alkaline solutions such as those used in anodizing, plating, chemical milling and processing of magnesium, titanium, or high-strength steel, high-precision aluminum chemical milling of deep cuts, and aluminum chemical milling of complex shapes. Materials used for repairs or to bridge gaps left by scribing operations (i.e., line sealer) are also included in this category.

(AA) Cryogenic flexible primer--A primer designed to provide corrosion resistance, flexibility, and adhesion of subsequent coating systems when exposed to loads up to and surpassing the yield point of the substrate at cryogenic temperatures (-275 degrees Fahrenheit and below).

(BB) Cryoprotective coating--A coating that insulates cryogenic or subcooled surfaces to limit propellant boil-off, maintain structural integrity of metallic structures during ascent or re-entry, and prevent ice formation.

(CC) Cyanoacrylate adhesive--A fast-setting, single component adhesive that cures at room temperature. Also known as "super glue."

(DD) Dry lubricative material--A coating consisting of lauric acid, cetyl alcohol, waxes, or other noncross linked or resin-bound materials that act as a dry lubricant.

(EE) Electric or radiation-effect coating--A coating or coating system engineered to interact, through absorption or reflection, with specific regions of the electromagnetic energy spectrum, such as the ultraviolet, visible, infrared, or microwave regions. Uses include, but are not limited to, lightning strike protection, electromagnetic pulse (EMP) protection, and radar avoidance. Coatings that have been designated as "classified" by the Department of Defense are excluded.

(FF) Electrostatic discharge and electromagnetic interference coating--A coating applied to space vehicles, missiles, aircraft radomes, and helicopter blades to disperse static energy or reduce electromagnetic interference.

(GG) Elevated-temperature Skydrol-resistant commercial primer--A primer applied primarily to commercial aircraft (or commercial aircraft adapted for military use) that must withstand immersion in phosphate-ester hydraulic fluid (Skydrol 500b or equivalent) at the elevated temperature of 150 degrees Fahrenheit for 1,000 hours.

(HH) Epoxy polyamide topcoat--A coating used where harder films are required or in some areas where engraving is accomplished in camouflage colors.

(II) Fire-resistant (interior) coating--For civilian aircraft, fire-resistant interior coatings are used on passenger cabin interior parts that are subject to the FAA fireworthiness requirements. For military aircraft, fire-resistant interior coatings are used on parts that are subject to the flammability requirements of MIL-STD-1630A and MIL-A-87721. For space applications, these coatings are used on parts that are subject to the flammability requirements of SE-R-0006 and SSP 30233.

(JJ) Flexible primer--A primer that meets flexibility requirements such as those needed for adhesive bond primed fastener heads or on surfaces expected to contain fuel. The flexible coating is required because it provides a compatible, flexible substrate over bonded sheet rubber and rubber-type coatings as well as a flexible bridge between the fasteners, skin, and skin-to-skin joints on outer aircraft skins. This flexible bridge allows more topcoat flexibility around fasteners and decreases the chance of the topcoat cracking around the fasteners. The result is better corrosion resistance.

(KK) Flight test coating--A coating applied to aircraft other than missiles or single-use aircraft prior to flight testing to protect the aircraft from corrosion and to provide required marking during flight test evaluation.

(LL) Flush cleaning--Removal of contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component or coating equipment by passing solvent over, into, or through the item being cleaned. The solvent may simply be poured into the item being cleaned and then drained, or assisted by air or hydraulic pressure, or by pumping. Hand-wipe cleaning operations where wiping, scrubbing, mopping, or other hand action are used are not included.

(MM) Fuel tank adhesive--An adhesive used to bond components exposed to fuel and must be compatible with fuel tank coatings.

(NN) Fuel tank coating--A coating applied to fuel tank components for the purpose of corrosion and/or bacterial growth inhibition and to assure sealant adhesion in extreme environmental conditions.

(OO) Grams of VOC per liter of coating (less water and less exempt solvent)--The weight of VOC per combined volume of total volatiles and coating solids, less water and exempt compounds. Can be calculated by the following equation:
Figure: 30 TAC §115.420(c)(1)(OO) (No change.)

(PP) Hand-wipe cleaning operation--Removing contaminants such as dirt, grease, oil, and coatings from an aerospace vehicle or component by physically rubbing it with a material such as a rag, paper, or cotton swab that has been moistened with a cleaning solvent.

(QQ) High temperature coating--A coating designed to withstand temperatures of more than 350 degrees Fahrenheit.

(RR) Hydrocarbon-based cleaning solvent--A solvent which is composed of VOC (photochemically reactive hydrocarbons) and/or oxygenated hydrocarbons, has a maximum vapor pressure of seven millimeters of mercury (mm Hg) at 20 degrees Celsius (68 degrees Fahrenheit), and contains no hazardous air pollutant (HAP) identified in the 1990 Amendments to the Federal Clean Air Act (FCAA), §112(b).

(SS) Insulation covering--Material that is applied to foam insulation to protect the insulation from mechanical or environmental damage.

(TT) Intermediate release coating--A thin coating applied beneath topcoats to assist in removing the topcoat in depainting operations and generally to allow the use of less hazardous depainting methods.

(UU) Lacquer--A clear or pigmented coating formulated with a nitrocellulose or synthetic resin to dry by evaporation without a chemical reaction. Lacquers are resoluble in their original solvent.

(VV) Limited access space--Internal surfaces or passages of an aerospace vehicle or component that cannot be reached without the aid of an airbrush or a spray gun extension for the application of coatings.

(WW) Metalized epoxy coating--A coating that contains relatively large quantities of metallic pigmentation for appearance and/or added protection.

(XX) Mold release--A coating applied to a mold surface to prevent the molded piece from sticking to the mold as it is removed.

(YY) Monthly weighted average--The total weight of VOC emission from all coatings divided by the total volume of those coatings (minus water and exempt solvents) delivered to the application system each calendar month. Coatings shall not be combined for purposes of calculating the monthly weighted average. In addition, determination of compliance is based on each individual coating operation.

(ZZ) Nonstructural adhesive--An adhesive that bonds nonload bearing aerospace components in noncritical applications and is not covered in any other specialty adhesive categories.

(AAA) Operating parameter value--A minimum or maximum value established for a control equipment or process parameter that, if achieved by itself or in combination with one or more other operating parameter values, determines that an owner or operator has continued to comply with an applicable emission limitation.

(BBB) Optical antireflection coating--A coating with a low reflectance in the infrared and visible wavelength ranges that is used for antireflection on or near optical and laser hardware.

(CCC) Part marking coating--Coatings or inks used to make identifying markings on materials, components, and/or assemblies of aerospace vehicles. These markings may be either permanent or temporary.

(DDD) Pretreatment coating--An organic coating that contains at least 0.5% acids by weight and is applied directly to metal or composite surfaces to provide surface etching, corrosion resistance, adhesion, and ease of stripping.

(EEE) Primer--The first layer and any subsequent layers of identically formulated coating applied to the surface of an aerospace vehicle or component. Primers are typically used for corrosion prevention, protection from the environment, functional fluid resistance, and adhesion of subsequent coatings. Primers that are defined as specialty coatings are not included under this definition.

(FFF) Radome--The nonmetallic protective housing for electromagnetic transmitters and receivers (e.g., radar, electronic countermeasures, etc.).

(GGG) Rain erosion-resistant coating--A coating or coating system used to protect the leading edges of parts such as flaps,

stabilizers, radomes, engine inlet nacelles, etc. against erosion caused by rain impact during flight.

(HHH) Research and development--An operation whose primary purpose is for research and development of new processes and products and that is conducted under the close supervision of technically trained personnel and is not involved in the manufacture of final or intermediate products for commercial purposes, except in a de minimis manner.

(III) Rocket motor bonding adhesive--An adhesive used in rocket motor bonding applications.

(JJJ) Rocket motor nozzle coating--A catalyzed epoxy coating system used in elevated temperature applications on rocket motor nozzles.

(KKK) Rubber-based adhesive--A quick setting contact cement that provides a strong, yet flexible bond between two mating surfaces that may be of dissimilar materials.

(LLL) Scale inhibitor--A coating that is applied to the surface of a part prior to thermal processing to inhibit the formation of scale.

(MMM) Screen print ink--An ink used in screen printing processes during fabrication of decorative laminates and decals.

(NNN) Sealant--A material used to prevent the intrusion of water, fuel, air, or other liquids or solids from certain areas of aerospace vehicles or components. There are two categories of sealants: extrudable/rollable/brushable sealants and sprayable sealants.

(OOO) Seal coat maskant--An overcoat applied over a maskant to improve abrasion and chemical resistance during production operations.

(PPP) Self-priming topcoat--A topcoat that is applied directly to an uncoated aerospace vehicle or component for purposes of corrosion prevention, environmental protection, and functional fluid resistance. More than one layer of identical coating formulation may be applied to the vehicle or component.

(QQQ) Semiaqueous cleaning solvent--A solution in which water is a primary ingredient. More than 60% by volume of the solvent solution as applied must be water.

(RRR) Silicone insulation material--An insulating material applied to exterior metal surfaces for protection from high temperatures caused by atmospheric friction or engine exhaust. These materials differ from ablative coatings in that they are not "sacrificial."

(SSS) Solid film lubricant--A very thin coating consisting of a binder system containing as its chief pigment material one or more of the following: molybdenum, graphite, polytetrafluoroethylene, or other solids that act as a dry lubricant between faying (i.e., closely or tightly fitting) surfaces.

(TTT) Space vehicle--A man-made device, either manned or unmanned, designed for operation beyond earth's atmosphere. This definition includes integral equipment such as models, mock-ups, prototypes, molds, jigs, tooling, hardware jackets, and test coupons. Also included is auxiliary equipment associated with test, transport, and storage, that through contamination can compromise the space vehicle performance.

(UUU) Specialty coating--A coating that, even though it meets the definition of a primer, topcoat, or self-priming topcoat, has additional performance criteria beyond those of primers, topcoats, and self-priming topcoats for specific applications. These performance criteria may include, but are not limited to, temperature or fire resistance, substrate compatibility, antireflection, temporary protection or marking, sealing, adhesively joining substrates, or enhanced corrosion protection.

(VVV) Specialized function coating--A coating that fulfills extremely specific engineering requirements that are limited in application and are characterized by low volume usage. This category excludes coatings covered in other specialty coating categories.

(WWW) Structural autoclavable adhesive--An adhesive used to bond load-carrying aerospace components that is cured by heat and pressure in an autoclave.

(XXX) Structural nonautoclavable adhesive--An adhesive cured under ambient conditions that is used to bond load-carrying aerospace components or other critical functions, such as nonstructural bonding in the proximity of engines.

(YYY) Surface preparation--The removal of contaminants from the surface of an aerospace vehicle or component or the activation or reactivation of the surface in preparation for the application of a coating.

(ZZZ) Temporary protective coating--A coating applied to provide scratch or corrosion protection during manufacturing, storage, or transportation. Two types include peelable protective coatings and alkaline removable coatings. These materials are not intended to protect against strong acid or alkaline solutions. Coatings that provide this type of protection from chemical processing are not included in this category.

(AAAA) Thermal control coating--A coating formulated with specific thermal conductive or radiative properties to permit temperature control of the substrate.

(BBBB) Topcoat--A coating that is applied over a primer on an aerospace vehicle or component for appearance, identification, camouflage, or protection. Topcoats that are defined as specialty coatings are not included under this definition.

(CCCC) Touch-up and repair coating--A coating used to cover minor coating imperfections appearing after the main coating operation.

(DDDD) Touch-up and repair operation--That portion of the coating operation that is the incidental application of coating used to cover minor imperfections in the coating finish or to achieve complete coverage. This definition includes out-of-sequence or out-of-cycle coating.

(EEEE) Volatile organic compound (VOC) composite vapor pressure--The sum of the partial pressures of the compounds defined as VOCs, determined by the following calculation:
Figure: 30 TAC §115.420(c)(1)(EEEE) (No change.)

(FFFF) Waterborne (water-reducible) coating--A coating which contains more than 5.0% water by weight as applied in its volatile fraction.

(GGGG) Wet fastener installation coating--A primer or sealant applied by dipping, brushing, or daubing to fasteners that are installed before the coating is cured.

(HHHH) Wing coating--A corrosion-resistant topcoat that is resilient enough to withstand the flexing of the wings.

(2) Can coating--The coating of cans for beverages (including beer), edible products (including meats, fruit, vegetables, and others), tennis balls, motor oil, paints, and other mass-produced cans.

(3) Coil coating--The coating of any flat metal sheet or strip supplied in rolls or coils.

(4) Fabric coating--The application of coatings to fabric, which includes rubber application (rainwear, tents, and industrial products such as gaskets and diaphragms). The following definitions apply to fabric coatings.

(A) Plasticizer--A material used to keep plastic material soft and viscous.

(B) Plastisol--A coating that is a liquid dispersion of small particles of resins and plasticizers that are fused to become a plastic.

(C) Wash Primer--A material used to clean and/or activate surfaces of fabric, and may contain no more than 5.0 percent, by weight, solid materials.

(5) Factory surface coating of flat wood paneling--Coating of flat wood paneling products, including hardboard, hardwood plywood, particle board, printed interior paneling, and tile board.

(6) Large appliance coating--The coating of doors, cases, lids, panels, and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and other large appliances.

(7) Metal furniture coating--The coating of metal furniture (tables, chairs, wastebaskets, beds, desks, lockers, benches, shelves, file cabinets, lamps, and other metal furniture products) or the coating of any metal part which will be a part of a nonmetal furniture product.

(8) Mirror backing coating--The application of coatings to the silvered surface of a mirror.

(9) Miscellaneous metal parts and products coating.

(A) Clear coat--A coating which lacks opacity or which is transparent and which may or may not have an undercoat that is used as a reflectant base or undertone color.

(B) Drum (metal)--Any cylindrical metal shipping container with a nominal capacity equal to or greater than 12 gallons (45.4 liters) but equal to or less than 110 gallons (416 liters).

(C) Extreme performance coating--A coating intended for exposure to extreme environmental conditions, such as continuous outdoor exposure; temperatures frequently above 95 degrees Celsius (203 degrees Fahrenheit); detergents; abrasive and scouring agents; solvents; and corrosive solutions, chemicals, or atmospheres.

(D) High-bake coatings--Coatings designed to cure at temperatures above 194 degrees Fahrenheit.

(E) Low-bake coatings--Coatings designed to cure at temperatures of 194 degrees Fahrenheit or less.

(F) Miscellaneous metal parts and products (MMPP) coating--The coating of MMPP in the following categories at original equipment manufacturing operations; designated on-site maintenance shops which recoat used parts and products; and off-site job shops which coat new parts and products or which recoat used parts and products:

(i) large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.);

(ii) small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

(iii) small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

(iv) commercial machinery (computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

(v) industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

(vi) fabricated metal products (metal-covered doors, frames, etc.); and

(vii) any other category of coated metal products, including, but not limited to, those which are included in the Standard Industrial Classification Code major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (nonelectrical machinery), major group 36 (electrical machinery), major group 37 (transportation equipment), major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries). Excluded are those surface coating processes specified in paragraphs (1) - (8) and (10) - (14) of this subsection.

(G) Pail (metal)--Any cylindrical metal shipping container with a nominal capacity equal to or greater than 1 gallon (3.8 liters) but less than 12 gallons (45.4 liters) and constructed of 29 gauge or heavier material.

(10) Paper coating--The coating of paper and pressure-sensitive tapes (regardless of substrate and including paper, fabric, and plastic film) and related web coating processes on plastic film (including typewriter ribbons, photographic film, and magnetic tape) and metal foil (including decorative, gift wrap, and packaging).

(11) Marine coatings.

(A) Air flask specialty coating--Any special composition coating applied to interior surfaces of high pressure breathing air flasks to provide corrosion resistance and that is certified safe for use with breathing air supplies.

(B) Antenna specialty coating--Any coating applied to equipment through which electromagnetic signals must pass for reception or transmission.

(C) Antifoulant specialty coating--Any coating that is applied to the underwater portion of a vessel to prevent or reduce the attachment of biological organisms and that is registered with the EPA as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act.

(D) Batch--The product of an individual production run of a coating manufacturer's process. (A batch may vary in composition from other batches of the same product.)

(E) Bitumens--Black or brown materials that are soluble in carbon disulfide, which consist mainly of hydrocarbons.

(F) Bituminous resin coating--Any coating that incorporates bitumens as a principal component and is formulated primarily to be applied to a substrate or surface to resist ultraviolet radiation and/or water.

(G) Epoxy--Any thermoset coating formed by reaction of an epoxy resin (i.e., a resin containing a reactive epoxide with a curing agent).

(H) General use coating--Any coating that is not a specialty coating.

(I) Heat resistant specialty coating--Any coating that during normal use must withstand a temperature of at least 204 degrees Celsius (400 degrees Fahrenheit).

(J) High-gloss specialty coating--Any coating that achieves at least 85% reflectance on a 60 degree meter when tested by the American Society for Testing and Materials (ASTM) Method D523 [~~D-523~~].

(K) High-temperature specialty coating--Any coating that during normal use must withstand a temperature of at least 426 degrees Celsius (800 degrees Fahrenheit).

(L) Inorganic zinc (high-build) specialty coating--A coating that contains 960 grams per liter (eight pounds per gallon) or more elemental zinc incorporated into an inorganic silicate binder that is applied to steel to provide galvanic corrosion resistance. (These coatings are typically applied at more than two mil dry film thickness.)

(M) Maximum allowable thinning ratio--The maximum volume of thinner that can be added per volume of coating without exceeding the applicable VOC limit of §115.421(15) of this title.

(N) Military exterior specialty coating--Any exterior topcoat applied to military or United States Coast Guard vessels that are subject to specific chemical, biological, and radiological washdown requirements.

(O) Mist specialty coating--Any low viscosity, thin film, epoxy coating applied to an inorganic zinc primer that penetrates the porous zinc primer and allows the occluded air to escape through the paint film prior to curing.

(P) Navigational aids specialty coating--Any coating applied to Coast Guard buoys or other Coast Guard waterway markers when they are recoated aboard ship at their usage site and immediately returned to the water.

(Q) Nonskid specialty coating--Any coating applied to the horizontal surfaces of a marine vessel for the specific purpose of providing slip resistance for personnel, vehicles, or aircraft.

(R) Nonvolatiles (or volume solids)--Substances that do not evaporate readily. This term refers to the film-forming material of a coating.

(S) Nuclear specialty coating--Any protective coating used to seal porous surfaces such as steel (or concrete) that otherwise would be subject to intrusion by radioactive materials. These coatings must be resistant to long-term (service life) cumulative radiation exposure (ASTM D4082 [~~D4082-83~~]), relatively easy to decontaminate (ASTM D4256[~~-83~~]), and resistant to various chemicals to which the coatings are likely to be exposed (ASTM 3912 [~~3912-80~~]). (For nuclear coatings, see the general protective requirements outlined by the Nuclear Regulatory Commission [~~"U.S. Atomic Energy Commission in a report entitled "U.S. Atomic Energy Commission~~] Regulatory Guide 1.54, "Service Level I, II, III, and In-Scope License Renewal Protective Coatings Applied to Nuclear Power Plants" Revision 3, [~~"~~] dated April 2017 [~~June 1973~~], available in 82 *Federal Register* 19113, [~~through the Government Printing Office at (202) 512-2249~~] as document number 2017-08363. [~~A74062-00001.)~~]

(T) Organic zinc specialty coating--Any coating derived from zinc dust incorporated into an organic binder that contains more than 960 grams of elemental zinc per liter (eight pounds per gallon) of coating, as applied, and that is used for the expressed purpose of corrosion protection.

(U) Pleasure craft--Any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 20 meters (65.6 feet) in length. A vessel rented exclusively to, or chartered for, individuals for such purposes shall be considered a pleasure craft.

(V) Pretreatment wash primer specialty coating--Any coating that contains a minimum of 0.5% acid by weight that is applied only to bare metal surfaces to etch the metal surface for corrosion resistance and adhesion of subsequent coatings.

(W) Repair and maintenance of thermoplastic coating of commercial vessels (specialty coating)--Any vinyl, chlorinated rubber, or bituminous resin coating that is applied over the same type of existing coating to perform the partial recoating of any in-use commercial vessel. (This definition does not include coal tar epoxy coatings, which are considered "general use" coatings.)

(X) Rubber camouflage specialty coating--Any specially formulated epoxy coating used as a camouflage topcoat for exterior submarine hulls and sonar domes.

(Y) Sealant for thermal spray aluminum--Any epoxy coating applied to thermal spray aluminum surfaces at a maximum thickness of one dry mil.

(Z) Ship--Any marine or fresh-water vessel, including self-propelled vessels, those propelled by other craft (barges), and navigational aids (buoys). This definition includes, but is not limited to, all military and Coast Guard vessels, commercial cargo and passenger (cruise) ships, ferries, barges, tankers, container ships, patrol and pilot boats, and dredges. Pleasure craft and offshore oil or gas drilling platforms are not considered ships.

(AA) Shipbuilding and ship repair operations--Any building, repair, repainting, converting, or alteration of ships or offshore oil or gas drilling platforms.

(BB) Special marking specialty coating--Any coating that is used for safety or identification applications, such as ship numbers and markings on flight decks.

(CC) Specialty interior coating--Any coating used on interior surfaces aboard United States military vessels pursuant to a coating specification that requires the coating to meet specified fire retardant and low toxicity requirements, in addition to the other applicable military physical and performance requirements.

(DD) Tack coat specialty coating--Any thin film epoxy coating applied at a maximum thickness of two dry mils to prepare an epoxy coating that has dried beyond the time limit specified by the manufacturer for the application of the next coat.

(EE) Undersea weapons systems specialty coating--Any coating applied to any component of a weapons system intended to be launched or fired from under the sea.

(FF) Weld-through preconstruction primer (specialty coating)--A coating that provides corrosion protection for steel during inventory, is typically applied at less than one mil dry film thickness, does not require removal prior to welding, is temperature resistant (burn back from a weld is less than 1.25 centimeters (0.5 inches)), and does not normally require removal before applying film-building coatings, including inorganic zinc high-build coatings. When constructing new vessels, there may be a need to remove areas of weld-through preconstruction primer due to surface damage or contamination prior to application of film-building coatings.

(12) Automobile and light-duty truck manufacturing.

(A) Automobile coating--The assembly-line coating of passenger cars, or passenger car derivatives, capable of seating 12 or fewer passengers.

(B) Light-duty truck coating--The assembly-line coating of motor vehicles rated at 8,500 pounds (3,855.5 kg) gross vehicle weight or less and designed primarily for the transportation of property, or derivatives such as pickups, vans, and window vans.

(13) Vehicle refinishing (body shops).

(A) Basecoat/clearcoat system--A topcoat system composed of a pigmented basecoat portion and a transparent clearcoat portion. The VOC content of a basecoat (BCCA-AG)/clearcoat (cc) system shall be calculated according to the following formula.
Figure: 30 TAC §115.420(c)(13)(A) (No change.)

(B) Precoat--Any coating that is applied to bare metal to deactivate the metal surface for corrosion resistance to a subsequent water-based primer. This coating is applied to bare metal solely for the prevention of flash rusting.

(C) Pretreatment--Any coating which contains a minimum of 0.5% acid by weight that is applied directly to bare metal surfaces to etch the metal surface for corrosion resistance and adhesion of subsequent coatings.

(D) Primer or primer surfacers--Any base coat, sealer, or intermediate coat which is applied prior to colorant or aesthetic coats.

(E) Sealers--Coatings that are formulated with resins which, when dried, are not readily soluble in typical solvents. These coatings act as a shield for surfaces over which they are sprayed by resisting the penetration of solvents which are in the final topcoat.

(F) Specialty coatings--Coatings or additives which are necessary due to unusual job performance requirements. These coatings or additives prevent the occurrence of surface defects and impart or improve desirable coating properties. These products include, but are not limited to, uniform finish blenders, elastomeric materials for coating of flexible plastic parts, coatings for non-metallic parts, jambing clear coatings, gloss flatteners, and anti-glare/safety coatings.

(G) Three-stage system--A topcoat system composed of a pigmented basecoat portion, a semitransparent midcoat portion, and a transparent clearcoat portion. The VOC content of a three-stage system shall be calculated according to the following formula:
Figure: 30 TAC §115.420(c)(13)(G) (No change.)

(H) Vehicle refinishing (body shops)--The coating of motor vehicles, as defined in §114.620 of this title (relating to Definitions), including, but not limited to, motorcycles, passenger cars, vans, light-duty trucks, medium-duty trucks, heavy-duty trucks, buses, and other vehicle body parts, bodies, and cabs by an operation other than the original manufacturer. The coating of non-road vehicles and non-road equipment, as these terms are defined in §114.3 and §114.6 of this title (relating to Low Emission Vehicle Fleet Definitions; and Low Emission Fuel Definitions), and trailers is not included.

(I) Wipe-down solutions--Any solution used for cleaning and surface preparation.

(14) Vinyl coating--The use of printing or any decorative or protective topcoat applied over vinyl sheets or vinyl-coated fabric.

(15) Wood parts and products. The following terms apply to wood parts and products coating facilities subject to §115.421(14) of this title.

(A) Clear coat--A coating which lacks opacity or which is transparent and uses the undercoat as a reflectant base or undertone color.

(B) Clear sealers--Liquids applied over stains, toners, and other coatings to protect these coatings from marring during handling and to limit absorption of succeeding coatings.

(C) Final repair coat--Liquids applied to correct imperfections or damage to the topcoat.

(D) Opaque ground coats and enamels--Colored, opaque liquids applied to wood or wood composition substrates which completely hide the color of the substrate in a single coat.

(E) Semitransparent spray stains and toners--Colored liquids applied to wood to change or enhance the surface without concealing the surface, including but not limited to, toners and non-grain-raising stains.

(F) Semitransparent wiping and glazing stains--Colored liquids applied to wood that require multiple wiping steps to enhance the grain character and to partially fill the porous surface of the wood.

(G) Shellacs--Coatings formulated solely with the resinous secretions of the lac beetle (laccifer lacca), thinned with alcohol, and formulated to dry by evaporation without a chemical reaction.

(H) Topcoat--A coating which provides the final protective and aesthetic properties to wood finishes.

(I) Varnishes--Clear wood finishes formulated with various resins to dry by chemical reaction on exposure to air.

(J) Wash coat--A low-solids clear liquid applied over semitransparent stains and toners to protect the color coats and to set the fibers for subsequent sanding or to separate spray stains from wiping stains to enhance color depth.

(K) Wood parts and products coating--The coating of wood parts and products, excluding factory surface coating of flat wood paneling.

(16) Wood furniture manufacturing facilities. The following terms apply to wood furniture manufacturing facilities subject to §115.421(15) of this title.

(A) Adhesive--Any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means. Adhesives are not considered to be coatings or finishing materials for wood furniture manufacturing facilities subject to §115.421(15) of this title.

(B) Basecoat--A coat of colored material, usually opaque, that is applied before graining inks, glazing coats, or other opaque finishing materials and is usually topcoated for protection.

(C) Cleaning operations--Operations in which organic solvent is used to remove coating materials from equipment used in wood furniture manufacturing operations.

(D) Continuous coater--A finishing system that continuously applies finishing materials onto furniture parts moving along a conveyor system. Finishing materials that are not transferred to the part are recycled to the finishing material reservoir. Several types of application methods can be used with a continuous coater, including spraying, curtain coating, roll coating, dip coating, and flow coating.

(E) Conventional air spray--A spray coating method in which the coating is atomized by mixing it with compressed air at an air pressure greater than 10 pounds per square inch gauge (psig) at the point of atomization. Airless and air-assisted airless spray technologies are not conventional air spray because the coating is not atomized by mixing it with compressed air. Electrostatic spray technology is also not conventional air spray because an electrostatic charge is employed to attract the coating to the workpiece. In addition, high-volume low-pressure (HVLP) spray technology is not conventional air spray because its pressure is less than 10 psig.

(F) Finishing application station--The part of a finishing operation where the finishing material is applied (for example, a spray booth).

(G) Finishing material--A coating used in the wood furniture industry. For the wood furniture manufacturing industry, such materials include, but are not limited to, basecoats, stains, washcoats, sealers, and topcoats.

(H) Finishing operation--Those activities in which a finishing material is applied to a substrate and is subsequently air-dried, cured in an oven, or cured by radiation.

(I) Organic solvent--A liquid containing VOCs that is used for dissolving or dispersing constituents in a coating; adjusting the viscosity of a coating; cleaning; or washoff. When used in a coating, the organic solvent evaporates during drying and does not become a part of the dried film.

(J) Sealer--A finishing material used to seal the pores of a wood substrate before additional coats of finishing material are applied. Washcoats, which are used in some finishing systems to optimize aesthetics, are not sealers.

(K) Stain--Any color coat having a solids content of no more than 8.0% by weight that is applied in single or multiple coats directly to the substrate. Includes, but is not limited to, nongrain raising stains, equalizer stains, sap stains, body stains, no-wipe stains, penetrating stains, and toners.

(L) Strippable booth coating--A coating that is applied to a booth wall to provide a protective film to receive overspray during finishing operations; is subsequently peeled off and disposed; and reduces or eliminates the need to use organic solvents to clean booth walls.

(M) Topcoat--The last film-building finishing material applied in a finishing system. A material such as a wax, polish, nonoxidizing oil, or similar substance that must be periodically reapplied to a surface over its lifetime to maintain or restore the reapplied material's intended effect is not considered to be a topcoat.

(N) Touch-up and repair--The application of finishing materials to cover minor finishing imperfections.

(O) Washcoat--A transparent special purpose coating having a solids content of 12% by weight or less. Washcoats are applied over initial stains to protect and control color and to stiffen the wood fibers in order to aid sanding.

(P) Washoff operations--Those operations in which organic solvent is used to remove coating from a substrate.

(Q) Wood furniture--Any product made of wood, a wood product such as rattan or wicker, or an engineered wood product such as particleboard that is manufactured under any of the following standard industrial classification codes: 2434 (wood kitchen cabinets), 2511 (wood household furniture, except upholstered), 2512 (wood household furniture, upholstered), 2517 (wood television, radios, phonograph and sewing machine cabinets), 2519 (household furniture not elsewhere classified), 2521 (wood office furniture), 2531 (public building and related furniture), 2541 (wood office and store fixtures, partitions, shelving and lockers), 2599 (furniture and fixtures not elsewhere classified), or 5712 (custom kitchen cabinets).

(R) Wood furniture component--Any part that is used in the manufacture of wood furniture. Examples include, but are not limited to, drawer sides, cabinet doors, seat cushions, and laminated tops. However, foam seat cushions manufactured and fabricated at a facility that does not engage in any other wood furniture or wood furniture component manufacturing operation are excluded from this definition.

(S) Wood furniture manufacturing operations--The finishing, cleaning, and washoff operations associated with the production of wood furniture or wood furniture components.

§115.421. Emission Specification.

The owner or operator of the surface coating processes specified in §115.420(a) of this title (relating to Applicability and Definitions) shall not cause, suffer, allow, or permit volatile organic compound (VOC) emissions to exceed the specified emission limits in paragraphs (1) - (16) of this subsection. These limitations are based on the daily weighted average of all coatings delivered to each coating line, except for those in paragraph (9) of this subsection which are based on paneling surface area, and those in paragraph (15) of this subsection which, if using an averaging approach, must use one of the daily averaging equations within that paragraph. The owner or operator of a surface coating operation subject to paragraph (10) of the subsection may choose to comply by using the monthly weighted average option as defined in §115.420(c)(1)(YY) of this title.

(1) Large appliance coating. VOC emissions from the application, flashoff, and oven areas during the coating of large appliances (prime and topcoat, or single coat) must not exceed 2.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.34 kilogram/liter (kg/liter)).

(2) Metal furniture coating. VOC emissions from metal furniture coating lines (prime and topcoat, or single coat) must not exceed 3.0 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.36 kg/liter).

(3) Coil coating. VOC emissions from the coating (prime and topcoat, or single coat) of metal coils must not exceed 2.6 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.31 kg/liter).

(4) Paper coating. VOC emissions from the coating of paper (or specified tapes or films) must not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).

(5) Fabric coating. [~~VOC emissions from the coating of fabric must not exceed 2.9 pounds per gallon of coating (minus water and exempt solvent) delivered to the application system (0.35 kg/liter).~~]

(A) In the Beaumont-Port Arthur, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, in Gregg, Nueces, and Victoria Counties, and in Bexar County until March 1, 2026, VOC emissions from the coating of fabric must not exceed 350 grams per liter of coating (minus water and exempt solvent) delivered to the application system (2.9 pounds per gallon).

(B) In the Bexar County area, the following limits apply.

(i) VOC emissions from the application of coating or wash primer to fabric substrates must not exceed 265 grams per liter of coating (minus water and exempt solvent) delivered to the application system (2.2 pounds per gallon).

(ii) VOC emissions from the application of plastisol to fabric substrates must not exceed 20 grams per liter of coating (minus water and exempt solvent) delivered to the application system (0.167 pounds per gallon).

(6) Vinyl coating. VOC emissions from the coating of vinyl fabrics or sheets must not exceed 3.8 pounds per gallon of coating (minus water and exempt solvent) delivered to the application

system (0.45 kg/liter). Plastisol coatings should not be included in calculations.

(7) Can coating. The following VOC emission limits must be achieved, on the basis of VOC solvent content per unit of volume of coating (minus water and exempt solvent) delivered to the application system:
Figure: 30 TAC §115.421(7) (No change.)

(8) Miscellaneous metal parts and products (MMPP) coating.

(A) VOC emissions from the coating of MMPP must not exceed the following limits for each surface coating type:
Figure: 30 TAC §115.421(8) (No change.)

(B) If more than one emission limitation in subparagraph (A) of this paragraph applies to a specific coating, then the least stringent emission limitation applies.

(C) All VOC emissions from non-exempt solvent washings must be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(9) Factory surface coating of flat wood paneling. The following emission limits apply to each product category of factory-finished paneling (regardless of the number of coats applied):
Figure: 30 TAC §115.421(9) (No change.)

(10) Aerospace coatings. The VOC content of coatings, including any VOC-containing materials added to the original coating supplied by the manufacturer, that are applied to aerospace vehicles or components must not exceed the following limits (in grams of VOC per liter of coating, less water and exempt solvent). The following applications are exempt from the VOC content limits of this paragraph: manufacturing or re-work of space vehicles or antique aerospace vehicles or components of each; touchup; United States Department of Defense classified coatings; and separate coating formulations in volumes less than 50 gallons per year to a maximum of 200 gallons per year for all such formulations at an account.

(A) For the broad categories of primers, topcoats, and chemical milling maskants (Type I/II) which are not specialty coatings as listed in subparagraph (B) of this paragraph:

(i) primer, 350;

(ii) topcoats (including self-priming topcoats), 420; and

(iii) chemical milling maskants:

(I) Type I, 622; and

(II) Type II, 160.

(B) For specialty coatings:
Figure: 30 TAC §115.421(10)(B) (No change.)

(11) Automobile and light-duty truck manufacturing coating. The following VOC emission limits must be achieved, on the basis of solvent content per unit volume of coating (minus water and exempt solvents) delivered to the application system or for primer surfacer and top coat application, compliance may be demonstrated on the basis of VOC emissions per unit volume of solids deposited as determined by §115.425(3) of this title (relating to Testing Requirements).
Figure: 30 TAC §115.421(11) (No change.)

(12) Vehicle refinishing coating (body shops). VOC emissions from coatings or solvents must not exceed the following limits, as delivered to the application system. Additional control requirements for vehicle refinishing (body shops) are referenced in §115.422 of this title (relating to Control Requirements).
Figure: 30 TAC §115.421(12) (No change.)

(13) Surface coating of mirror backing.

(A) VOC emissions from the coating of mirror backing must not exceed the following limits for each surface coating application method:

(i) 4.2 pounds per gallon (0.50 kg/liter) of coating (minus water and exempt solvent) delivered to a curtain coating application system; and

(ii) 3.6 pounds per gallon (0.43 kg/liter) of coating (minus water and exempt solvent) delivered to a roll coating application system.

(B) All VOC emissions from solvent washings must be included in determination of compliance with the emission limitations in subparagraph (A) of this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.

(14) Surface coating of wood parts and products. VOC emissions from the coating of wood parts and products must not exceed the following limits, as delivered to the application system, for each surface coating type. All VOC emissions from solvent washings must be included in determination of compliance with the emission limitations in this paragraph, unless the solvent is directed into containers that prevent evaporation into the atmosphere.
Figure: 30 TAC §115.421(14) (No change.)

(15) Surface coating at wood furniture manufacturing facilities. For facilities which are subject to this paragraph, adhesives are not considered to be coatings or finishing materials.

(A) VOC emissions from finishing operations must be limited by:

(i) using topcoats with a VOC content no greater than 0.8 kilogram of VOC per kilogram of solids (0.8 pound of VOC per pound of solids), as delivered to the application system; or

(ii) using a finishing system of sealers with a VOC content no greater than 1.9 kilograms of VOC per kilogram of solids (1.9 pounds of VOC per pound of solids), as applied, and topcoats with a VOC content no greater than 1.8 kilograms of VOC per kilogram of solids (1.8 pounds of VOC per pound of solids), as delivered to the application system; or

(iii) for wood furniture manufacturing facilities using acid-cured alkyd amino vinyl sealers or acid-cured alkyd amino conversion varnish topcoats, using sealers and topcoats that meet the following criteria:

(I) if the wood furniture manufacturing facility uses acid-cured alkyd amino vinyl sealers and acid-cured alkyd amino conversion varnish topcoats, the sealer must contain no more than 2.3 kilograms of VOC per kilogram of solids (2.3 pounds of VOC per pound of solids), as applied, and the topcoat must contain no more than 2.0 kilograms of VOC per kilogram of solids (2.0 pounds of VOC per pound of solids), as delivered to the application system; or

(II) if the wood furniture manufacturing facility uses a sealer other than an acid-cured alkyd amino vinyl sealer and acid-cured alkyd amino conversion varnish topcoats, the sealer must contain no more than 1.9 kilograms of VOC per kilogram of solids (1.9 pounds of VOC per pound of solids), as applied, and the topcoat must contain no more than 2.0 kilograms of VOC per kilogram of solids (2.0 pounds of VOC per pound of solids), as delivered to the application system; or

(III) if the wood furniture manufacturing facility uses an acid-cured alkyd amino vinyl sealer and a topcoat other than an acid-cured alkyd amino conversion varnish topcoat, the sealer must contain no more than 2.3 kilograms of VOC per kilogram of solids (2.3 pounds of VOC per pound of solids), as applied, and the topcoat must contain no more than 1.8 kilograms of VOC per kilogram of solids (1.8 pounds of VOC per pound of solids), as delivered to the application system; or

(iv) using an averaging approach and demonstrating that actual daily emissions from the wood furniture manufacturing facility are less than or equal to the lower of the actual versus allowable emissions using one of the following inequalities:
Figure: 30 TAC §115.421(15)(A)(iv) (No change.)

(v) using a vapor control system that will achieve an equivalent reduction in emissions as the requirements of clauses (i) or (ii) of this subparagraph. If this option is used, the requirements of §115.423(3) of this title do not apply; or

(vi) using a combination of the methods presented in clauses (i) - (v) of this subparagraph.

(B) Strippable booth coatings used in cleaning operations must not contain more than 0.8 kilogram of VOC per kilogram of solids (0.8 pound of VOC per pound of solids), as delivered to the application system.

(16) Marine coatings.

(A) The following VOC emission limits apply to the surface coating of ships and offshore oil or gas drilling platforms at shipbuilding and ship repair operations, and are based upon the VOC content of the coatings as delivered to the application system.
Figure: 30 TAC §115.421(16)(A) (No change.)

(B) For a coating to which thinning solvent is routinely or sometimes added, the owner or operator shall determine the VOC content as follows.

(i) Prior to the first application of each batch, designate a single thinner for the coating and calculate the maximum allowable thinning ratio (or ratios, if the shipbuilding and ship repair operation complies with the cold-weather limits in addition to the other limits specified in subparagraph (A) of this paragraph) for each batch as follows.
Figure: 30 TAC §115.421(16)(B)(i) (No change.)

(ii) If the volume fraction of solids in the batch as supplied Vs is not supplied directly by the coating manufacturer, the owner or operator shall determine Vs as follows.
Figure: 30 TAC §115.421(16)(B)(ii) (No change.)

§115.425. Testing Requirements.

The testing requirements for surface coating processes in the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas and in Gregg, Nueces, and Victoria Counties are as follows.

(1) The owner or operator shall determine compliance with §115.421 of this title (relating to Emission Specifications) by applying the following test methods, as appropriate, except as specified in paragraph (5) of this section. Where a test method also inadvertently measures compounds that are exempt solvent, an owner or operator may exclude these exempt solvents when determining compliance with an emission standard:

(A) Test Method 24 (40 Code of Federal Regulations (CFR) Part 60, Appendix A) with a one-hour bake;

(B) ASTM International Test Methods D1186, D1200, D1644, D2832, D3794, and D3960 [~~D 1186-06.01, D 1200-06.01, D 3794-06.01, D 2832-69, D 1644-75, and D 3960-81~~];

(C) The United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds (VOC) Emitted by Paint, Ink, and Other Coatings (EPA-450/3-84-019)," as in effect December, 1984;

(D) additional test procedures described in 40 Code of Federal Regulations (CFR) §60.446; or

(E) minor modifications to these test methods approved by the executive director

(2) Compliance with §115.423(3) of this title (relating to Alternate Control Requirements) must be determined by applying the following test methods, as appropriate:

(A) Test Methods 1-4 (40 CFR Part 60, Appendix A) for determining flow rates, as necessary;

(B) Test Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Test Method 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(D) additional performance test procedures described in 40 CFR §60.044; or

(E) minor modifications to these test methods approved by the executive director.

(3) Compliance with the alternative emission limits in §115.421(11) of this title must be determined by applying the following test methods, as appropriate:

(A) Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations (EPA 450/3-88-018); or

(B) The procedure contained in this paragraph for determining daily compliance with the alternative emission limitation in §115.421(11) of this title for final repair. Calculation of occurrence weighted average for each combination of repair coatings (primer, specific basecoat, clearcoat) must be determined by the following procedure.

(i) The characteristics identified below, which are represented in the following equations by the variables shown, are established for each repair material as sprayed:
Figure: 30 TAC §115.425(3)(B)(i) (No change.)

(ii) The relative occurrence weighted usage is calculated as follows:
Figure: 30 TAC §115.425(3)(B)(ii) (No change.)

(iii) The occurrence weighted average (Q) in pounds of VOC per gallon of coating (minus water and exempt solvents) as applied for each potential combination of repair coatings is calculated according to paragraph (4) of this section.
Figure: 30 TAC §115.425(3)(B)(iii) (No change.)

(4) In the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, the owner or operator of surface coating processes subject to §115.423(3) of this title shall measure the capture efficiency using applicable procedures outlined in 40 CFR §52.741, Subpart O, Appendix B. These procedures are: Procedure T-Criteria for and Verification of a Permanent or Tem-

porary Total Enclosure; Procedure L-VOC Input; Procedure G.2-Captured VOC Emissions (Dilution Technique); Procedure F.1-Fugitive VOC Emissions from Temporary Enclosures; and Procedure F.2-Fugitive VOC Emissions from Building Enclosures.

(A) Exemptions to capture efficiency testing requirements:

(i) If a source installs a permanent total enclosure (PTE) that meets the specifications of Procedure T and directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted from capture efficiency testing requirements. This does not exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a PTE are met during testing for control efficiency.

(ii) If a source uses a control device designed to collect and recover VOC (e.g., carbon adsorption system), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR §60.433, with the following additional restrictions.

(I) The source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This must be done within 72 hours following each 24-hour period of the 30-day period.

(II) The solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorber system); or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency must be calculated using one of the following four protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the executive director and the EPA.

(i) Gas/gas method using Temporary Total Enclosure (TTE). The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.425(4)(B)(i) (No change.)

(ii) Liquid/gas method using TTE. The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.425(4)(B)(ii) (No change.)

(iii) Gas/gas method using the building or room in which the affected source is located as the enclosure (BE) and in which G and F are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.425(4)(B)(iii) (No change.)

(iv) Liquid/gas method using a BE in which L and F are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.425(4)(B)(iv) (No change.)

(C) The following conditions must be met in measuring capture efficiency:

(i) Any error margin associated with a test protocol may not be incorporated into the results of a capture efficiency test.

(ii) All affected facilities must accomplish the initial capture efficiency testing by July 31, 1992, in Brazoria, Dallas, El Paso, Galveston, Harris, Jefferson, Orange, and Tarrant Counties, and by July 31, 1993, in Chambers, Collin, Denton, Fort Bend, Hardin, Liberty, Montgomery, and Waller Counties, except that all mirror backing coating facilities must accomplish the initial capture efficiency testing by July 31, 1994. Affected sources in the Bexar County area must conduct initial capture efficiency testing by no later than July 1, 2024.

(iii) During an initial pretest meeting, the executive director and the source owner or operator shall identify those operating parameters that must be monitored to ensure that capture efficiency does not change significantly over time. These parameters must be monitored and recorded initially during the capture efficiency testing and thereafter during facility operation. The executive director may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(5) The following additional testing requirements apply to each aerospace vehicle or component coating facility subject to §115.421(10) of this title.

(A) For coatings which are not waterborne (water-reducible), determine the VOC content of each formulation (less water and less exempt solvents) as applied using manufacturer's supplied data or Method 24 of 40 CFR Part 60, Appendix A. If there is a discrepancy between the manufacturer's formulation data and the results of the Method 24 analysis, compliance must be based on the results from the Method 24 analysis. For water-borne (water-reducible) coatings, manufacturer's supplied data alone can be used to determine the VOC content of each formulation.

(B) For aqueous and semiaqueous cleaning solvents, manufacturers' supplied data must be used to determine the water content.

(C) For hand-wipe cleaning solvents, manufacturers' supplied data or standard engineering reference texts or other equivalent methods shall be used to determine the vapor pressure or VOC composite vapor pressure for blended cleaning solvents.

(D) Except for specialty coatings, compliance with the test method requirements of 40 CFR §63.750, (National Emission Standards for Aerospace Manufacturing and Rework Facilities), is considered to represent compliance with the requirements of this section.

(6) Test methods other than those specified in paragraphs (1) - (5) of this section may be used if validated by 40 CFR Part 63, Appendix A, Test Method 301. For the purposes of this paragraph, substitute "executive director" each place that Test Method 301 references "administrator."

§115.427. Exemptions.

In the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions) and in Gregg, Nueces, and Victoria Counties the following exemptions apply.

(1) The following coating operations are exempt from the miscellaneous metal parts and products surface coating emission spec-

ifications in §115.421(8) of this title (relating to Emission Specifications):

(A) aerospace vehicles and components;

(B) in the Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, vehicle refinishing (body shops); and

(C) in the Beaumont-Port Arthur and Houston-Galveston-Brazoria areas, ships and offshore oil or gas drilling platforms.

(2) The following coating operations are exempt from the factory surface coating of flat wood paneling emission specifications in §115.421(9) of this title:

(A) the manufacture of exterior siding;

(B) tile board; or

(C) particle board used as a furniture component.

(3) In the Beaumont-Port Arthur, Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, the following exemptions apply to surface coating processes, except as specified in paragraphs (3)(K) and (6) of this section, and except for vehicle refinishing (body shops) controlled by §115.421(12) of this title. Excluded from the volatile organic compounds (VOC) emission calculations are coatings and solvents used in surface coating activities that are not addressed by the surface coating categories of §115.421(1) - (16) or §115.453 of this title (relating to Control Requirements). For example, architectural coatings [~~(i.e., coatings that are~~] applied in the field to stationary structures and their appurtenances, [~~to~~] portable buildings, [~~to~~] pavements, or [~~to~~] curbs[~~)~~] at a property would not be included in the calculations.

(A) Surface coating operations on a property that, when uncontrolled, will emit a combined weight of VOC of less than 3.0 pounds per hour and 15 pounds in any consecutive 24-hour period are exempt from §115.421 of this title and §115.423 of this title (relating to Alternate Control Requirements).

(B) Surface coating operations on a property that, when uncontrolled, will emit a combined weight of VOC of less than 100 pounds in any consecutive 24-hour period are exempt from §115.421 and §115.423 of this title if documentation is provided to and approved by both the executive director and the United States Environmental Protection Agency to demonstrate that necessary coating performance criteria cannot be achieved with coatings that satisfy applicable emission specifications and that control equipment is not technically or economically feasible.

(C) Surface coating operations on a property for which total coating and solvent usage does not exceed 150 gallons in any consecutive 12-month period are exempt from §115.421 and §115.423 of this title.

(D) Mirror backing coating operations located on a property that, when uncontrolled, emit a combined weight of VOC less than 25 tons in one year (based on historical coating and solvent usage) are exempt from this division.

(E) Wood furniture manufacturing facilities that are subject to and are complying with §115.421(15) of this title and §115.422(3) of this title (relating to Control Requirements) are exempt from §115.421(14) of this title. These wood furniture manufacturing facilities must continue to comply with §115.421(14) of this title until these facilities are in compliance with §115.421(15) and §115.422(3) of this title.

(F) Wood furniture manufacturing facilities that, when uncontrolled, emit a combined weight of VOC from wood furniture manufacturing operations less than 25 tons per year (tpy) are exempt from §115.421(15) and §115.422(3) of this title.

(G) In Hardin, Jefferson, and Orange Counties, wood parts and products coating facilities are exempt from §115.421(14) of this title.

(H) In Hardin, Jefferson, and Orange Counties, shipbuilding and ship repair operations that, when uncontrolled, emit a combined weight of VOC from ship and offshore oil or gas drilling platform surface coating operations less than 50 tpy are exempt from §115.421(16) and §115.422(4) of this title.

(I) In Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties, shipbuilding and ship repair operations that, when uncontrolled, emit a combined weight of VOC from ship and offshore oil or gas drilling platform surface coating operations less than 25 tpy are exempt from §115.421(16) and §115.422(4) of this title.

(J) The following activities where cleaning and coating of aerospace vehicles or components may take place are exempt from this division: research and development, quality control, laboratory testing, and electronic parts and assemblies, except for cleaning and coating of completed assemblies.

(K) Beginning March 1, 2026, fabric coating operations in the Bexar County area are no longer eligible for the exemptions in subparagraphs (3)(A) - (C) of this subsection.

(4) Vehicle refinishing (body shops) in Hardin, Jefferson, and Orange Counties are exempt from §115.421(12) and §115.422(1) and (2) of this title.

(5) The coating of vehicles at in-house (fleet) vehicle refinishing operations and the coating of vehicles by private individuals are exempt from §115.421(11)(B) and §115.422(1) and (2) of this title. This exemption is not applicable if the coating of a vehicle by a private individual occurs at a commercial operation.

(6) Aerosol coatings (spray paint) are exempt from this division. However, in the Bexar County area, aerosol coatings, commonly known as spray paint, are no longer exempt from the requirements for fabric coating operations as of the compliance date specified in §115.429(g) of this title.

(7) In Gregg, Nueces, and Victoria Counties, surface coating operations located at any property that, when uncontrolled, will emit a combined weight of VOC less than 550 pounds (249.5 kilograms) in any continuous 24-hour period are exempt from §115.421 of this title. Excluded from this calculation are coatings and solvents used in surface coating activities that are not addressed by the surface coating categories of §115.421(1) - (10) of this title. For example, architectural coatings (i.e., coatings that are applied in the field to stationary structures and their appurtenances, to portable buildings, to pavements, or to curbs) at a property would not be included in the calculation.

(8) In the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, the following surface coating categories that are subject to the requirements of Chapter 115, Subchapter E, Division 5 of this title (relating to Control Requirements for Surface Coating Processes) are exempt from the requirements in this division:

(A) large appliance coating;

(B) metal furniture coating;

(C) miscellaneous metal parts and products coating;

(D) each paper coating line with the potential to emit equal to or greater than 25 tpy of VOC from all coatings applied; and

(E) automobile and light-duty truck manufacturing coating.

(9) In the Dallas-Fort Worth and the Houston-Galveston-Brazoria areas, the re-coating of used miscellaneous metal parts and products at a designated on-site maintenance shop that was exempt from §115.421(8) of this title prior to January 1, 2012, or that begins operation on or after January 1, 2012, is exempt from all requirements in this division. The re-coating of used miscellaneous metal parts and products at a designated on-site maintenance shop that was subject to §115.421(8) of this title prior to January 1, 2012, remains subject to this division. For purposes of this exemption, a designated on-site maintenance shop is an area at a site where used miscellaneous metal parts or products are re-coated on a routine basis. Miscellaneous metal parts and products coating processes in Wise County are not subject to this division.

§115.429. Counties and Compliance Schedules.

(a) In Brazoria, Chambers, Collin, Dallas, Denton, Ellis, El Paso, Fort Bend, Galveston, Gregg, Hardin, Harris, Jefferson, Johnson, Kaufman, Liberty, Montgomery, Nueces, Orange, Parker, Rockwall, Tarrant, Victoria, and Waller Counties, the compliance date has passed and the owner or operator of a surface coating process shall continue to comply with this division.

(b) In Hardin, Jefferson, and Orange Counties the compliance date has passed and the owner or operator of each shipbuilding and ship repair operation that, when uncontrolled, emits a combined weight of volatile organic compounds from ship and offshore oil or gas drilling platform surface coating operations equal to or greater than 50 tons per year and less than 100 tons per year shall continue to comply with this division.

(c) The owner or operator of a paper surface coating process located in the Dallas-Fort Worth area, except Wise County, and Houston-Galveston-Brazoria area, as defined in §115.10 of this title (relating to Definitions), shall comply with the requirements in §115.422(7) of this title (relating to Control Requirements), no later than March 1, 2013.

(d) The owner or operator of a surface coating process in Wise County shall comply with the requirements in this division as soon as practicable, but no later than January 1, 2017.

(e) The owner or operator of a surface coating process that becomes subject to this division on or after the applicable compliance date of this section shall comply with the requirements in this division no later than 60 days after becoming subject. [~~The owner or operator of a surface coating process in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties that becomes subject to this division on or after the applicable compliance date in this section shall comply with the requirements in this division as soon as practicable, but no later than 60 days after becoming subject.~~]

(f) The owner or operator of a surface coating process in the Bexar County area subject to the requirements of this division shall comply with the requirements of this division, with the exception of §115.421(5)(B) of this title (relating to Emission Specification), no later than January 1, 2025. [~~All affected persons of a surface coating process in the Bexar County area that becomes subject to this division on or after the applicable compliance date in this subsection shall comply with the requirements of this division as soon as practicable, but no later than 60 days after becoming subject.~~]

(g) The owner or operator of a fabric coating process in the Bexar County area subject to the requirements of §115.421 of this title shall comply with the requirements in §115.421(5)(B) of this title no later than March 1, 2026.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
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Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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DIVISION 4. OFFSET LITHOGRAPHIC PRINTING

30 TAC §§115.440, 115.441, 115.449

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.440. Applicability and Definitions.

(a) Applicability. The provisions in this division apply to offset lithographic printing lines located in the Bexar County, Dallas-Fort Worth, El Paso, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions).

(b) Definitions. Unless specifically defined in the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382) or in §§3.2, 101.1, and 115.10 of this title (relating to Definitions), the terms in this division have the meanings commonly used in the field of air pollution control. In addition, the following meanings apply unless the context clearly indicates otherwise.

(1) Alcohol--Any of the hydroxyl-containing organic compounds with a molecular weight equal to or less than 74.12, which includes methanol, ethanol, propanol, and butanol.

(2) Alcohol substitutes--Nonalcohol additives that contain volatile organic compounds and are used in the fountain solution to reduce the surface tension of water or prevent ink piling.

(3) Batch--A supply of fountain solution or cleaning solution that is prepared and used without alteration until completely used or removed from the printing process.

(4) Cleaning solution--Liquids used to remove ink and debris from the operating surfaces of the printing press and its parts.

(5) Fountain solution--A mixture of water, nonvolatile printing chemicals, and a liquid additive that reduces the surface tension of the water so that it spreads easily across the printing plate surface. The fountain solution wets the non-image areas so that the ink is maintained within the image areas.

(6) Heatset--Any operation where heat is required to evaporate ink oil from the printing ink.

(7) Lithography--A plane-o-graphic printing process where the image and non-image areas are on the same plane of the printing plate. The image and non-image areas are chemically differentiated so the image area is oil receptive and the non-image area is water receptive.

(8) Major printing source--All offset lithographic printing lines located on a property with combined uncontrolled emissions of volatile organic compounds (VOC) greater than or equal to:

(A) 50 tons of VOC per calendar year before and 25 tons of VOC per calendar year on and after November 7, 2025, in the Dallas-Fort Worth area as defined in §115.10 of this title (relating to Definitions), except Wise County;

(B) 25 tons of VOC per calendar year in the Houston-Galveston-Brazoria area, as defined in §115.10 of this title;

(C) 100 tons of VOC per calendar year before and 25 tons of VOC per calendar year on and after November 7, 2025, in Wise County; or

(D) 100 tons of VOC per calendar year before and 50 tons of VOC per calendar year on and after March 1, 2026, [~~on and after January 1, 2025~~] in the Bexar County area.

(9) Minor printing source--All offset lithographic printing lines located on a property with combined uncontrolled emissions of volatile organic compounds (VOC) less than:

(A) 50 tons of VOC per calendar year before and 25 tons of VOC per calendar year on and after November 7, 2025, in the Dallas-Fort Worth area, defined in §115.10 of this title (relating to Definitions), except Wise County;

(B) 25 tons of VOC per calendar year in the Houston-Galveston-Brazoria area, as defined in §115.10 of this title;

(C) 100 tons of VOC per calendar year before and 25 tons of VOC per calendar year on and after November 7, 2025, in Wise County; or

(D) 100 tons of VOC per calendar year before and 50 tons of VOC per calendar year on and after March 1, 2026, [~~on and after January 1, 2025,~~] in the Bexar County area.

(10) Non-heatset--Any operation where the printing inks are set without the use of heat. For the purposes of this division, ultraviolet-cured and electron beam-cured inks are considered non-heatset.

(11) Offset lithography--A printing process that transfers the ink film from the lithographic plate to an intermediary surface (blanket) that, in turn, transfers the ink film to the substrate.

(12) Volatile organic compound (VOC) composite partial pressure--The sum of the partial pressures of the compounds that meet the definition of VOC in §101.1 of this title (relating to Definitions). The VOC composite partial pressure is calculated as follows.
Figure: 30 TAC §115.440(b)(12) (No change.)

§115.441. Exemptions.

(a) In the Bexar County, Dallas-Fort Worth, and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), the owner or operator of all offset lithographic printing lines located on a property with combined emissions of volatile organic compounds less than 3.0 tons per calendar year when uncontrolled, is exempt from the requirements in this division except as specified in subsection (b)(1) of this section and §115.446 of this title (relating to Monitoring and Recordkeeping Requirements).

(b) In the Bexar County, Dallas-Fort Worth and Houston-Galveston-Brazoria areas, the owner or operator of a minor printing source, as defined in §115.440 of this title (relating to Applicability and Definitions) and in Wise County, the owner or operator of a minor printing source or a major printing source, as defined in §115.440 of this title:

(1) may exempt up to 110 gallons of cleaning solution per calendar year from the content limits in §115.442(c)(1) of this title (relating to Control Requirements), though as of March 1, 2026, this exemption no longer applies in Bexar County;

(2) may exempt any press with a total fountain solution reservoir less than 1.0 gallons from the fountain solution content limits in §115.442(c)(2) - (4) of this title; and

(3) may exempt any sheet-fed press with a maximum sheet size of 11.0 inches by 17.0 inches or less from the fountain solution content limits in §115.442(c)(2) of this title.

§115.449. Compliance Schedules.

(a) In the El Paso area, the owner or operator of all offset lithographic printing presses must be in compliance with §§115.442, 115.443, 115.445, and 115.446 of this title (relating to Control Requirements; Alternate Control Requirements; Approved Test Methods; and Monitoring and Recordkeeping Requirements) as soon as practicable, but no later than November 15, 1996.

(b) In Collin, Dallas, Denton, and Tarrant Counties, the owner or operator of all offset lithographic printing presses on a property that, when uncontrolled, emit a combined weight of volatile organic compounds (VOC) equal to or greater than 50 tons per calendar year, must be in compliance with §§115.442(a), 115.443, 115.445, and 115.446(a) of this title as soon as practicable, but no later than December 31, 2000.

(c) In Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties, the owner or operator of all offset lithographic printing presses on a property that, when uncontrolled, emit a combined weight of VOC equal to or greater than 25 tons per calendar year, must be in compliance with §§115.442(a), 115.443, 115.445, and 115.446(a) of this title as soon as practicable, but no later than December 31, 2002.

(d) In Ellis, Johnson, Kaufman, Parker, and Rockwall Counties, the owner or operator of all offset lithographic printing presses on a property that, when uncontrolled, emit a combined weight of VOC equal to or greater than 50 tons per calendar year, shall comply with §§115.442(a), 115.443, 115.445, and 115.446(a) of this title as soon as practicable, but no later than March 1, 2009.

(e) The owner or operator of a major printing source, as defined in §115.440 of this title (relating to Applicability and Definitions), in Brazoria, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, and Waller Counties, as defined in §115.10 of this title (relating to Definitions), shall comply with the requirements in this division no later than March 1, 2011, except as specified in subsections (b), (c), and (d) of this section.

(f) The owner or operator of a minor printing source, as defined in §115.440 of this title, in the Brazoria, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, and Waller Counties, shall comply with the requirements in this division no later than March 1, 2012.

(g) The owner or operator of a major or minor printing source, as defined in §115.440 of this title, in Wise County, shall comply with the requirements in this division as soon as practicable, but no later than January 1, 2017.

(h) The owner or operator of a major or minor printing source, as defined in §115.440 of this title, in the Bexar County area subject to the requirements of this division shall comply with the requirements of this division no later than January 1, 2025.

(i) The owner or operator of an offset lithographic printing line in Brazoria, Bexar, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, Waller, and Wise Counties that becomes subject to this division on or after the date specified in subsections (e) - (h) of this section, shall comply with the requirements in this division no later than 60 days after becoming subject.

(j) The owner or operator of a major or minor printing source, as defined in §115.440(b)(8)(D) and §115.440(b)(9)(D) of this title, in the Bexar County area subject to the requirements of this division shall comply with the requirements of this division no later than March 1, 2026.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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DIVISION 5. CONTROL REQUIREMENTS FOR SURFACE COATING PROCESSES

30 TAC §§115.450, 115.451, 115.453, 115.455, 115.458, 115.459

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.450. Applicability and Definitions.

(a) Applicability. In the Bexar County, Dallas-Fort Worth and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions), the requirements in this division apply to the following surface coating processes, except as specified in paragraphs (6) through (10) [~~(8)~~] of this subsection:

(1) large appliance surface coating;

(2) metal furniture surface coating;

(3) miscellaneous metal parts and products surface coating, miscellaneous plastic parts and products surface coating, pleasure craft surface coating, and automotive/transportation and business machine plastic parts surface coating at the original equipment manufacturer and off-site job shops that coat new parts and products or that re-coat used parts and products;

(4) motor vehicle materials applied to miscellaneous metal and plastic parts specified in paragraph (3) of this subsection, at the original equipment manufacturer and off-site job shops that coat new metal and plastic parts or that re-coat used parts and products;

(5) paper, film, and foil surface coating lines with the potential to emit from all coatings greater than or equal to 25 tons per year of volatile organic compounds (VOC) when uncontrolled;

(6) in the Bexar County and Dallas-Fort Worth areas, automobile and light-duty truck assembly surface coating processes conducted by the original equipment manufacturer and operators that conduct automobile and light-duty truck surface coating processes under contract with the original equipment manufacturer;

(7) as of the compliance date specified in §115.459(e) or (g) of this title (relating to Compliance Schedules), industrial maintenance coatings in the Dallas-Fort Worth area and/or the Houston-Galveston-Brazoria area if the commission has published notice for the applicable area in the *Texas Register,* as provided in §115.459(e) or (g) of this title, to require compliance with the applicable contingency measure control requirements of §115.453(f) or (g) of this title (relating to Control Requirements); [~~and~~]

(8) as of the compliance date specified in §115.459(f) or (h) of this title, traffic marking coatings in the Dallas-Fort Worth area and/or the Houston-Galveston-Brazoria area if the commission

has published notice for the applicable area in the *Texas Register,* as provided in §115.459(f) or (h) of this title, to require compliance with the applicable contingency measure control requirements of §115.453(h) or (i) of this title; [.]

(9) in the Bexar County area beginning March 1, 2026, architectural coatings applied for compensation to stationary structures or their appurtenances; and

(10) in the Bexar County area beginning March 1, 2026, industrial maintenance coatings surface coating processes.

(b) General definitions. Unless specifically defined in the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382) or in §§3.2, 101.1, or 115.10 of this title (relating to Definitions), the terms in this division have the meanings commonly used in the field of air pollution control. In addition, the following meanings apply in this division unless the context clearly indicates otherwise.

(1) Aerosol coating (spray paint)--A hand-held, pressurized, non-refillable container that expels an adhesive or a coating in a finely divided spray when a valve on the container is depressed.

(2) Air-dried coating--A coating that is cured at a temperature below 194 degrees Fahrenheit (90 degrees Celsius). These coatings may also be referred to as low-bake coatings.

(3) Baked Coating--A coating that is cured at a temperature at or above 194 degrees Fahrenheit (90 degrees Celsius). These coatings may also be referred to as high-bake coatings.

(4) Coating application system--Devices or equipment designed for the purpose of applying a coating material to a surface. The devices may include, but are not be limited to, brushes, sprayers, flow coaters, dip tanks, rollers, knife coaters, and extrusion coaters.

(5) Coating line--An operation consisting of a series of one or more coating application systems and associated flash-off area(s), drying area(s), and oven(s) wherein a surface coating is applied, dried, or cured. The coating line ends at the point the coating is dried or cured, or prior to any subsequent application of a different coating.

(6) Coating solids (or solids)--The part of a coating that remains on the substrate after the coating is dried or cured.

(7) Daily weighted average--The total weight of volatile organic compounds (VOC) emissions from all coatings subject to the same VOC limit in §115.453 of this title (relating to Control Requirements), divided by the total volume or weight of those coatings (minus water and exempt solvent), where applicable, or divided by the total volume or weight of solids, delivered to the application system on each coating line each day. Coatings subject to different VOC content limits in §115.453 of this title may not be combined for purposes of calculating the daily weighted average.

(8) Multi-component coating--A coating that requires the addition of a separate reactive resin, commonly known as a catalyst or hardener, before application to form an acceptable dry film. These coatings may also be referred to as two-component coatings.

(9) Normally closed container--A container that is closed unless an operator is actively engaged in activities such as adding or removing material.

(10) One-component coating--A coating that is ready for application as it comes out of its container to form an acceptable dry film. A thinner, necessary to reduce the viscosity, is not considered a component.

(11) Pounds of volatile organic compounds (VOC) per gallon of coating (minus water and exempt solvent)--The basis for content limits for surface coating processes that can be calculated by the following equation:
Figure: 30 TAC §115.450(b)(11) (No change.)

(12) Pounds of volatile organic compounds (VOC) per gallon of solids--The basis for emission limits for surface coating processes that can be calculated by the following equation:
Figure: 30 TAC §115.450(b)(12) (No change.)

(13) Spray gun--A device that atomizes a coating or other material and projects the particulates or other material onto a substrate.

(14) Surface coating processes--Operations that use a coating application system.

(c) Specific surface coating definitions. The following meanings apply in this division unless the context clearly indicates otherwise.

(1) Automobile and light-duty truck manufacturing--The following definitions apply to this surface coating category.

(A) Adhesive--Any chemical substance that is applied for the purpose of bonding two surfaces together other than by mechanical means.

(B) Automobile and light-duty truck adhesive--An adhesive, including glass-bonding adhesive, used in an automobile or light-duty truck assembly surface coating process and applied for the purpose of bonding two vehicle surfaces together without regard to the substrates involved.

(C) Automobile and light-duty truck bedliner--A multicomponent coating used in an automobile or light-duty truck assembly surface coating process and applied to a cargo bed after the application of topcoat and outside of the topcoat operation to provide additional durability and chip resistance.

(D) Automobile and light-duty truck cavity wax--A coating, used in an automobile or light-duty truck assembly surface coating process, applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

(E) Automobile and light-duty truck deadener--A coating used in an automobile or light-duty truck assembly surface coating process and applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

(F) Automobile and light-duty truck gasket/gasket sealing material--A fluid used in an automobile or light-duty truck assembly surface coating process and applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization seal material.

(G) Automobile and light-duty truck glass-bonding primer--A primer, used in an automobile or light-duty truck assembly surface coating process, applied to windshield or other glass, or to body openings, to prepare the glass or body opening for the application of glass-bonding adhesives or the installation of adhesive-bonded glass. Automobile and light-duty truck glass-bonding primer includes glass-bonding/cleaning primers that perform both functions (cleaning and priming of the windshield or other glass, or body openings) prior to the application of an adhesive or the installation of adhesive-bonded glass.

(H) Automobile and light-duty truck lubricating wax/compound--A protective lubricating material used in an automobile or light-duty truck assembly surface coating process and applied to vehicle hubs and hinges.

(I) Automobile and light-duty truck sealer--A high viscosity material used in an automobile or light-duty truck assembly surface coating process and generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of automobile and light-duty truck sealer is to fill body joints completely so that there is no intrusion of water, gases, or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

(J) Automobile and light-duty truck trunk interior coating--A coating used in an automobile or light-duty truck assembly surface coating process outside of the primer-surfacer and topcoat operations and applied to the trunk interior to provide chip protection.

(K) Automobile and light-duty truck underbody coating--A coating used in an automobile or light-duty truck assembly surface coating process and applied to the undercarriage or firewall to prevent corrosion or provide chip protection.

(L) Automobile and light-duty truck weather strip adhesive--An adhesive used in an automobile or light-duty truck assembly surface coating process and applied to weather-stripping materials for the purpose of bonding the weather-stripping material to the surface of the vehicle.

(M) Automobile assembly surface coating process--The assembly-line coating of new passenger cars, or passenger car derivatives, capable of seating 12 or fewer passengers.

(N) Electrodeposition primer--A process of applying a protective, corrosion-resistant waterborne primer on exterior and interior surfaces that provides thorough coverage of recessed areas. Electrodeposition primer is a dip-coating method that uses an electrical field to apply or deposit the conductive coating onto the part; the object being painted acts as an electrode that is oppositely charged from the particles of paint in the dip tank. Electrodeposition primer is also referred to as E-Coat, Uni-Prime, and ELPO Primer.

(O) Final repair--The operation(s) performed and coating(s) applied to completely assembled motor vehicles or to parts that are not yet on a completely assembled vehicle to correct damage or imperfections in the coating. The curing of the coatings applied in these operations is accomplished at a lower temperature than that used for curing primer-surfacer and topcoat. This lower temperature cure avoids the need to send parts that are not yet on a completely assembled vehicle through the same type of curing process used for primer-surfacer and topcoat and is necessary to protect heat-sensitive components on completely assembled vehicles.

(P) In-line repair--The operation(s) performed and coating(s) applied to correct damage or imperfections in the topcoat on parts that are not yet on a completely assembled vehicle. The curing of the coatings applied in these operations is accomplished at essentially the same temperature as that used for curing the previously applied topcoat. In-line repair is also referred to as high-bake repair or high-bake reprocess. In-line repair is considered part of the topcoat operation.

(Q) Light-duty truck assembly surface coating process--The assembly-line coating of new motor vehicles rated at 8,500 pounds gross vehicle weight or less and designed primarily for the transportation of property, or derivatives such as pickups, vans, and window vans.

(R) Primer-surfacer--An intermediate protective coating applied over the electrodeposition primer and under the topcoat. Primer-surfacer provides adhesion, protection, and appearance properties to the total finish. Primer-surfacer is also referred to as guide coat or surfacer. Primer-surfacer operations may include other coatings (e.g., anti-chip, lower-body anti-chip, chip-resistant edge primer, spot primer, blackout, deadener, interior color, basecoat replacement coating, etc.) that are applied in the same spray booth(s).

(S) Topcoat--The final coating system applied to provide the final color or a protective finish. The topcoat may be a monocoat color or basecoat/clearcoat system. In-line repair and two-tone are part of topcoat. Topcoat operations may include other coatings (e.g., blackout, interior color, etc.) that are applied in the same spray booth(s).

(T) Solids turnover ratio (RT')--The ratio of total volume of coating solids that is added to the electrodeposition primer system (EDP) in a calendar month divided by the total volume design capacity of the EDP system.

(2) Automotive/transportation and business machine plastic parts--The following definitions apply to this surface coating category.

(A) Adhesion prime--A coating that is applied to a polyolefin part to promote the adhesion of a subsequent coating. An adhesion prime is clearly identified as an adhesion prime or adhesion promoter on its accompanying material safety data sheet.

(B) Automotive/transportation plastic parts--Interior and exterior plastic components of automobiles, trucks, tractors, lawnmowers, and other mobile equipment.

(C) Black coating--A coating that has a maximum lightness of 23 units and a saturation less than 2.8, where saturation equals the square root of A2 + B2. These criteria are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, maximum lightness is 33 units.

(D) Business machine--A device that uses electronic or mechanical methods to process information, perform calculations, print or copy information, or convert sound into electrical impulses for transmission. This definition includes devices listed in Standard Industrial Classification codes 3572, 3573, 3574, 3579, and 3661 and photocopy machines, a subcategory of Standard Industrial Classification code 3861.

(E) Clear coating--A coating that lacks color and opacity or is transparent and that uses the undercoat as a reflectant base or undertone color.

(F) Coating of plastic parts of automobiles and trucks--The coating of any plastic part that is or will be assembled with other parts to form an automobile or truck.

(G) Coating of business machine plastic parts--The coating of any plastic part that is or will be assembled with other parts to form a business machine.

(H) Electrostatic prep coat--A coating that is applied to a plastic part solely to provide conductivity for the subsequent application of a prime, a topcoat, or other coating through the use of electrostatic application methods. An electrostatic prep coat is clearly identified as an electrostatic prep coat on its accompanying material safety data sheet.

(I) Flexible coating--A coating that is required to comply with engineering specifications for impact resistance, mandrel bend, or elongation as defined by the original equipment manufacturer.

(J) Fog coat--A coating that is applied to a plastic part for the purpose of color matching without masking a molded-in texture.

A fog coat may not be applied at a thickness of more than 0.5 mil of coating solids.

(K) Gloss reducer--A coating that is applied to a plastic part solely to reduce the shine of the part. A gloss reducer may not be applied at a thickness of more than 0.5 mil of coating solids.

(L) Red coating--A coating that meets all of the following criteria:

(i) yellow limit: the hue of hostaperm scarlet;

(ii) blue limit: the hue of monastral red-violet;

(iii) lightness limit for metallics: 35% aluminum flake;

(iv) lightness limit for solids: 50% titanium dioxide white;

(v) solid reds: hue angle of -11 to 38 degrees and maximum lightness of 23 to 45 units; and

(vi) metallic reds: hue angle of -16 to 35 degrees and maximum lightness of 28 to 45 units. These criteria are based on Cielab color space, 0/45 geometry. For spherical geometry, specular included, the upper limit is 49 units. The maximum lightness varies as the hue moves from violet to orange. This is a natural consequence of the strength of the colorants, and real colors show this effect.

(M) Resist coat--A coating that is applied to a plastic part before metallic plating to prevent deposits of metal on portions of the plastic part.

(N) Stencil coat--A coating that is applied over a stencil to a plastic part at a thickness of 1.0 mil or less of coating solids. Stencil coats are most frequently letters, numbers, or decorative designs.

(O) Texture coat--A coating that is applied to a plastic part which, in its finished form, consists of discrete raised spots of the coating.

(P) Vacuum-metalizing coatings--Topcoats and basecoats that are used in the vacuum-metalizing process.

(3) Industrial maintenance coating--A high performance maintenance coating, including primers, sealers, undercoaters, intermediate coats, and topcoats, that is not applied to items meeting the definition for miscellaneous metal parts and products in §115.450(c)(6)(Q) of this section, and is formulated for application to stationary source substrates, including floors, exposed to one or more of the following extreme environmental conditions.

(A) Immersion in water, wastewater, or chemical solutions (aqueous and non-aqueous solutions), or chronic exposures of interior surfaces to moisture condensation; or

(B) Acute or chronic exposure to corrosive, caustic, or acidic agents, or to chemicals, chemical fumes, or chemical mixtures or solutions; or

(C) Frequent exposure to temperatures above 121°C (250°F); or

(D) Frequent heavy abrasion, including mechanical wear and frequent scrubbing with industrial solvents, cleansers, or scouring agents; or

(E) Exterior exposure of metal structures and structural components.

(4) Large appliance coating--The coating of doors, cases, lids, panels, and interior support parts of residential and commercial washers, dryers, ranges, refrigerators, freezers, water heaters, dishwashers, trash compactors, air conditioners, and other large appliances.

(A) Extreme high-gloss coating--A coating which, when tested by the American Society for Testing Material Test Method D523 adopted in 1980, shows a reflectance of 75% or more on a 60 degree meter.

(B) Extreme performance coating--A coating used on a metal surface where the coated surface is, in its intended use, subject to:

(i) chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures, or solutions;

(ii) repeated exposure to temperatures in excess of 250 degrees Fahrenheit (121 degrees Celsius);

(iii) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents; or

(iv) exposure to extreme environmental conditions, such as continuous outdoor exposure.

(C) Heat-resistant coating--A coating that must withstand a temperature of at least 400 degrees Fahrenheit (204 degrees Celsius) during normal use.

(D) Metallic coating--A coating that contains more than 0.042 pounds of metal particles per gallon of coating as applied. Metal particles are pieces of a pure elemental metal or a combination of elemental metals.

(E) Pretreatment coating--A coating that contains no more than 12% solids by weight and at least 0.50% acid by weight; is used to provide surface etching; and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(F) Solar-absorbent coating--A coating that has as its prime purpose the absorption of solar radiation.

(5) Metal furniture coating--The coating of metal furniture including, but not limited to, tables, chairs, wastebaskets, beds, desks, lockers, benches, shelves, file cabinets, lamps, and other metal furniture products or the coating of any metal part that will be a part of a nonmetal furniture product.

(A) Extreme high-gloss coating--A coating which, when tested by the American Society for Testing Material Test Method D523 adopted in 1980, shows a reflectance of 75% or more on a 60 degree meter.

(B) Extreme performance coating--A coating used on a metal surface where the coated surface is, in its intended use, subject to:

(i) chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures, or solutions;

(ii) repeated exposure to temperatures in excess of 250 degrees Fahrenheit (121 degrees Celsius);

(iii) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents; or

(iv) exposure to extreme environmental conditions, such as continuous outdoor exposure.

(C) Heat-resistant coating--A coating that must withstand a temperature of at least 400 degrees Fahrenheit (204 degrees Celsius) during normal use.

(D) Metallic coating--A coating containing more than 5.0 grams of metal particles per liter of coating as applied. Metal particles are pieces of a pure elemental metal or a combination of elemental metals.

(E) Pretreatment coating--A coating that contains no more than 12% solids by weight and at least 0.50% acid by weight; is used to provide surface etching; and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(F) Solar-absorbent coating--A coating that has as its primary purpose the absorption of solar radiation.

(6) Miscellaneous metal and plastic parts--The following definitions apply to this surface coating category.

(A) Camouflage coating--A coating used, principally by the military, to conceal equipment from detection.

(B) Clear coat--A coating that lacks opacity or is transparent and may or may not have an undercoat that is used as a reflectant base or undertone color.

(C) Drum (metal)--Any cylindrical metal shipping container with a capacity equal to or greater than 12 gallons but equal to or less than 110 gallons.

(D) Electric-dissipating coating--A coating that rapidly dissipates a high-voltage electric charge.

(E) Electric-insulting varnish--A non-convertible-type coating applied to electric motors, components of electric motors, or power transformers, to provide electrical, mechanical, and environmental protection or resistance.

(F) EMI/RFI shielding--A coating used on electrical or electronic equipment to provide shielding against electromagnetic interference (EMI), radio frequency interference (RFI), or static discharge.

(G) Etching filler--A coating that contains less than 23% solids by weight and at least 0.50% acid by weight and is used instead of applying a pretreatment coating followed by a primer.

(H) Extreme high-gloss coating--A coating which, when tested by the American Society for Testing and Materials Test Method D523 adopted in 1980, shows a reflectance of 75% or more on a 60 degree meter.

(I) Extreme performance coating--A coating used on a metal or plastic surface where the coated surface is, in its intended use, subject to one of the following conditions. Extreme performance coatings include, but are not limited to, coatings applied to locomotives, railroad cars, farm machinery, marine shipping containers, downhole drilling equipment, and heavy-duty trucks:

(i) chronic exposure to corrosive, caustic or acidic agents, chemicals, chemical fumes, chemical mixtures, or solutions;

(ii) repeated exposure to temperatures in excess of 250 degrees Fahrenheit (121 degrees Celsius);

(iii) repeated heavy abrasion, including mechanical wear and repeated scrubbing with industrial grade solvents, cleansers, or scouring agents; or

(iv) exposure to extreme environmental conditions, such as continuous outdoor exposure.

(J) Heat-resistant coating--A coating that must withstand a temperature of at least 400 degrees Fahrenheit (204 degrees Celsius) during normal use.

(K) High performance architectural coating--A coating used to protect architectural subsections and meets the requirements of the American Architectural Manufacturers Association's publication number AAMA 2604-05 (Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels) or 2605-05 (Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels).

(L) High temperature coating--A coating that is certified to withstand a temperature of 1000 degrees Fahrenheit (538 degrees Celsius) for 24 hours.

(M) Mask coating--A thin film coating applied through a template to coat a small portion of a substrate.

(N) Metallic coating--A coating containing more than 5.0 grams of metal particles per liter of coating as applied. Metal particles are pieces of a pure elemental metal or a combination of elemental metals.

(O) Military specification coating--A coating that has a formulation approved by a United States Military Agency for use on military equipment.

(P) Mold-seal coating--The initial coating applied to a new mold or a repaired mold to provide a smooth surface that when coated with a mold release coating, prevents products from sticking to the mold.

(Q) Miscellaneous metal parts and products--Parts and products considered miscellaneous metal parts and products include:

(i) large farm machinery (harvesting, fertilizing, and planting machines, tractors, combines, etc.);

(ii) small farm machinery (lawn and garden tractors, lawn mowers, rototillers, etc.);

(iii) small appliances (fans, mixers, blenders, crock pots, dehumidifiers, vacuum cleaners, etc.);

(iv) commercial machinery (computers and auxiliary equipment, typewriters, calculators, vending machines, etc.);

(v) industrial machinery (pumps, compressors, conveyor components, fans, blowers, transformers, etc.);

(vi) fabricated metal products (metal-covered doors, frames, etc.); and

(vii) any other category of coated metal products, including, but not limited to, those that are included in the Standard Industrial Classification Code major group 33 (primary metal industries), major group 34 (fabricated metal products), major group 35 (nonelectrical machinery), major group 36 (electrical machinery), major group 37 (transportation equipment), major group 38 (miscellaneous instruments), and major group 39 (miscellaneous manufacturing industries). Excluded are those surface coating processes specified in §115.420(c)(1) - (8) and (10) - (16) of this title (relating to Surface Coating Definitions) and paragraphs (1) - (4) and (6) - (8) of this subsection.

(R) Miscellaneous plastic parts and products--Parts and products considered miscellaneous plastic parts and products include, but are not limited to:

(i) molded plastic parts;

(ii) small and large farm machinery;

(iii) commercial and industrial machinery and equipment;

(iv) interior or exterior automotive parts;

(v) construction equipment;

(vi) motor vehicle accessories;

(vii) bicycles and sporting goods;

(viii) toys;

(ix) recreational vehicles;

(x) lawn and garden equipment;

(xi) laboratory and medical equipment;

(xii) electronic equipment; and

(xiii) other industrial and household products. Excluded are those surface coating processes specified in §115.420(c)(1) - (16) of this title and paragraphs (1) - (4) and (6) - (8) of this subsection.

(S) Multi-colored coating--A coating that exhibits more than one color when applied, is packaged in a single container, and applied in a single coat.

(T) Off-site job shop--A non-manufacturer of metal or plastic parts and products that applies coatings to such products at a site under contract with one or more parties that operate under separate ownership and control.

(U) Optical coating--A coating applied to an optical lens.

(V) Pail (metal)--Any cylindrical metal shipping container with a capacity equal to or greater than 1 gallon but less than 12 gallons and constructed of 29 gauge or heavier material.

(W) Pan-backing coating--A coating applied to the surface of pots, pans, or other cooking implements that are exposed directly to a flame or other heating elements.

(X) Prefabricated architectural component coating--A coating applied to metal parts and products that are to be used as an architectural structure.

(Y) Pretreatment coating--A coating that contains no more than 12% solids by weight and at least 0.50% acid by weight; is used to provide surface etching; and is applied directly to metal surfaces to provide corrosion resistance, adhesion, and ease of stripping.

(Z) Repair coating--A coating used to re-coat portions of a previously coated product that has sustained mechanical damage to the coating following normal surface coating processes.

(AA) Safety-indicating coating--A coating that changes physical characteristics, such as color, to indicate unsafe conditions.

(BB) Shock-free coating--A coating applied to electrical components to protect the user from electric shock. The coating has characteristics of being low-capacitance and high-resistance and having resistance to breaking down under high voltage.

(CC) Silicone-release coating--A coating that contains silicone resin and is intended to prevent food from sticking to metal surfaces such as baking pans.

(DD) Solar-absorbent coating--A coating that has as its primary purpose the absorption of solar radiation.

(EE) Stencil coating--A pigmented coating or ink that is rolled or brushed onto a template or stamp in order to add identifying letters, symbols, or numbers.

(FF) Touch-up coating--A coating used to cover minor coating imperfections appearing after the main surface coating process.

(GG) Translucent coating--A coating that contains binders and pigment and formulated to form a colored, but not opaque, film.

(HH) Vacuum-metalizing coating--The undercoat applied to the substrate on which the metal is deposited or the overcoat applied directly to the metal film. Vacuum metalizing or physical vapor deposition is the process whereby metal is vaporized and deposited on a substrate in a vacuum chamber.

(7) Motor vehicle materials--The following definitions apply to this surface coating category.

(A) Motor vehicle bedliner--A multi-component coating used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to a cargo bed after the application of topcoat to provide additional durability and chip resistance.

(B) Motor vehicle cavity wax--A coating used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied into the cavities of the vehicle primarily for the purpose of enhancing corrosion protection.

(C) Motor vehicle deadener--A coating used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to selected vehicle surfaces primarily for the purpose of reducing the sound of road noise in the passenger compartment.

(D) Motor vehicle gasket/sealing material--A fluid used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to coat a gasket or replace and perform the same function as a gasket. Automobile and light-duty truck gasket/gasket sealing material includes room temperature vulcanization seal material.

(E) Motor vehicle lubricating wax/compound--A protective lubricating material used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to vehicle hubs and hinges.

(F) Motor vehicle sealer--A high viscosity material used in a process that is not an automobile or light-duty truck manufacturing coating process and is generally, but not always, applied in the paint shop after the body has received an electrodeposition primer coating and before the application of subsequent coatings (e.g., primer-surfacer). The primary purpose of motor vehicle sealer is to fill body joints completely so that there is no intrusion of water, gases, or corrosive materials into the passenger area of the body compartment. Such materials are also referred to as sealant, sealant primer, or caulk.

(G) Motor vehicle trunk interior coating--A coating used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to the trunk interior to provide chip protection.

(H) Motor vehicle underbody coating--A coating used in a process that is not an automobile or light-duty truck manufacturing coating process and is applied to the undercarriage or firewall to prevent corrosion or provide chip protection.

(8) Paper, film, and foil coating--The coating of paper and pressure-sensitive tapes (regardless of substrate and including paper, fabric, and plastic film), related web coating processes on plastic film (including typewriter ribbons, photographic film, and magnetic tape), metal foil (including decorative, gift wrap, and packaging), industrial

and decorative laminates, abrasive products (including fabric coated for use in abrasive products), and flexible packaging.

(A) Paper, film, and foil coating includes the application of a continuous layer of a coating material across the entire width or any portion of the width of a paper, film, or foil web substrate to:

(i) provide a covering, finish, or functional or protective layer to the substrate;

(ii) saturate the substrate for lamination; or

(iii) provide adhesion between two substrates for lamination.

(B) Paper, film, and foil coating excludes coating performed on or in-line with any offset lithographic, screen, letterpress, flexographic, rotogravure, or digital printing press; or size presses and on-machine coaters that function as part of an in-line papermaking system.

(9) Pleasure craft--Any marine or fresh-water vessel used by individuals for noncommercial, nonmilitary, and recreational purposes that is less than 65.6 feet in length. A vessel rented exclusively to, or chartered for, individuals for such purposes is considered a pleasure craft.

(A) Antifoulant coating--A coating applied to the underwater portion of a pleasure craft to prevent or reduce the attachment of biological organisms, and registered with the United States Environmental Protection Agency as a pesticide under the Federal Insecticide, Fungicide, and Rodenticide Act (7 United States Code, §136).

(B) Antifoulant sealer/tie coating--A coating applied over an antifoulant coating to prevent the release of biocides into the environment or to promote adhesion between an antifoulant coating and a primer or other antifoulants.

(C) Extreme-90 high-gloss coating--A coating that achieves at least 90% reflectance on a 60 degree meter when tested by American Society for Testing and Materials Method D523 [~~D523-89~~].

(D) Finish primer-surfacer--A coating applied with a wet film thickness less than 10 mils prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, a moisture barrier, or promotion of a uniform surface necessary for filling in surface imperfections.

(E) High-build primer-surfacer--A coating applied with a wet film thickness of 10 mils or more prior to the application of a topcoat for purposes of providing corrosion resistance, adhesion of subsequent coatings, or a moisture barrier, or promoting a uniform surface necessary for filling in surface imperfections.

(F) High-gloss coating--A coating that achieves at least 85% reflectance on a 60 degree meter when tested by American Society for Testing and Materials Test Method D523 [~~D523-89~~].

(G) Pleasure craft coating--A marine coating, except unsaturated polyester resin (fiberglass) coatings, applied by brush, spray, roller, or other means to a pleasure craft.

(H) Pretreatment wash primer--A coating that contains no more than 25% solids by weight and at least 0.10% acids by weight; used to provide surface etching; and applied directly to fiberglass and metal surfaces to provide corrosion resistance and adhesion of subsequent coatings.

(I) Repair coating--A coating used to re-coat portions of a previously coated product that has sustained mechanical damage to the coating following normal surface coating processes.

(J) Topcoat--A final coating applied to the interior or exterior of a pleasure craft.

(K) Touch-up coating--A coating used to cover minor coating imperfections appearing after the main surface coating process.

(10) Traffic marking coating--A coating labeled and formulated for marking and striping streets, highways, or other traffic surfaces including, but not limited to, curbs, berms, driveways, parking lots, sidewalks, and airport runways.

(11) Architectural Coatings--Any coatings applied to stationary structures or their appurtenances, or to fields and lawns.

(A) Aluminum Roof Coatings--Roof coatings containing at least 0.7 pounds per gallon (84 grams per liter) of coating as applied, of elemental aluminum pigment.

(B) Appurtenance--Accessories to a stationary structure including, but not limited to: hand railings, cabinets, bathroom and kitchen fixtures, fences, rain-gutters and down-spouts, window screens, lamp-posts, heating and air conditioning equipment, other mechanical equipment, large fixed stationary tools, signs, motion picture and television production sets, and concrete forms.

(C) Below Ground Wood Preservatives--Wood preservatives formulated to protect below-ground wood.

(D) Bituminous Coating Materials--Black or brownish coating materials, soluble in carbon disulfide, consisting mainly of hydrocarbons and which are obtained from natural deposits, or as residues from the distillation of crude petroleum oils, or of low grades of coal.

(E) Bituminous Roof Primers--Primers formulated for or applied to roofing that incorporate bituminous coating materials.

(F) Bond Breakers--Coatings formulated for or applied between layers of concrete to prevent the freshly poured top layer of concrete from bonding to the substrate over which it is poured.

(G) Building Envelope--The ensemble of exterior and demising partitions of a building that enclose conditioned space.

(H) Building Envelope Coatings--Fluid applied coatings applied to the building envelope to provide a continuous barrier to air or vapor leakage through the building envelope that separates conditioned from unconditioned spaces. Building Envelope Coatings are applied to diverse materials including, but not limited to, concrete masonry units (CMU), oriented stranded board (OSB), gypsum board, and wood substrates and must meet the following performance criteria:

(i) Air Barriers formulated to have an air permeance not exceeding 0.004 cubic feet per minute (cfm) per square foot (ft^2) under a pressure differential of 1.57 pounds per square foot (0.004 cfm/ft^2 at 1.57 psf), (0.02 liters per square meter per second under a pressure differential of 75 Pascals (Pa) (0.02 liter per second per square meter at 75 Pa) when tested in accordance with ASTM E2178; and/or

(ii) Water Resistive Barriers formulated to resist liquid water that has penetrated a cladding system from further intruding into the exterior wall assembly and is classified as follows:

(I) Passes water resistance testing according to ASTM E331, and

(II) Water vapor permeance is classified in accordance with ASTM E96/E96M.

(I) Colorant--Solutions of dyes or suspensions of pigments.

(J) Concrete-Curing Compounds--coatings labeled and formulated for application to freshly poured concrete to retard the evap-

oration of water, harden the surface of freshly poured concrete, or dust-proof the surface of freshly poured concrete.

(K) Concrete Surface Retarders--Coatings containing one or more ingredients such as extender pigments, primary pigments, resins, and solvents that interact chemically with the cement to prevent hardening on the surface where the retarder is applied, allowing the mix of cement and sand at the surface to be washed away to create an exposed aggregate finish.

(L) Default Coatings--Specialty coatings (those other than flat or nonflat coatings) that are not defined in §115.450(c)(11) of this title as any other coating category.

(M) Driveway Sealers--Coatings that are applied to worn asphalt driveway surfaces in order to:

(i) Fill cracks;

(ii) Seal the surface to provide protection; or

(iii) Restore or preserve the surface appearance.

(N) Dry-Fog Coatings--Coatings which are formulated only for spray application so that when sprayed, overspray droplets dry before falling on floors and other surfaces.

(O) Faux Finishing Coatings--Coatings that meet one or more of the following subcategories:

(i) Clear Topcoats--Clear coatings used to enhance, seal, and protect a faux finishing coating that meets the requirements of §115.450(c)(11)(K)(ii), (iii), (iv) or (v) of this title. These clear topcoats must be sold and used solely as part of a faux finishing or graphic arts coating system.

(ii) Decorative Coatings--Coatings used to create a gonioapparent appearance, such as metallic, iridescent, or pearlescent appearance, that contain at least 48 grams of pearlescent mica pigment or other iridescent pigment per liter of coating as applied (at least 0.4 pounds per gallon).

(iii) Glazes--Coatings formulated and recommended to be used (or to be mixed with another coating) for:

(I) Wet-in-wet techniques, where a wet coating is applied over another wet coating to create artistic effects, including simulated marble or wood grain, or

(II) Wet-in-dry techniques, where a wet coating is applied over a pre-painted or a specially prepared substrate or base coat and is either applied or is treated during the drying period with various tools, such as a brush, rag, comb, or sponge to create artistic effects such as dirt, old age, smoke damage, simulated marble and wood grain finishes, decorative patterns, or color blending.

(iv) Japans--Pure concentrated pigments, finely ground in a slow drying vehicle used by motion picture and television production studios to create artistic effects including, but not limited to, dirt, old age, smoke damage, water damage, simulated marble, and wood grain.

(v) Trowel Applied Coatings--Coatings exclusively applied by trowel that are used to create aesthetic effects including, but not limited to, polished plaster, clay, suede and dimensional, tactile textures.

(P) Fire-Resistive Coatings--Opaque coatings formulated to protect the structural integrity of steel and other construction materials and listed by UL Solutions for the fire protection of steel.

(Q) Flat Coatings--Coatings that register a gloss of less than 15 on an 85-degree meter or less than five on a 60-degree meter according to ASTM Test method D523.

(R) Form Release Compounds--Coatings designed for or applied to a concrete form to prevent the freshly poured concrete from bonding to the form. The form may consist of metal, wood, or some material other than concrete.

(S) Gonioapparent--Change in appearance with a change in the angle of illumination or the angle of view, as defined according to ASTM E284.

(T) Graphic Arts Coatings (Sign Paints)--Coatings formulated for hand-application by artists using brush or roller techniques to indoor and outdoor signs (excluding structural components) and murals, including lettering enamels, poster colors, copy blockers, and bulletin enamels.

(U) Interior Stains--Stains labeled and formulated exclusively for use on interior surfaces.

(V) Lacquers--Clear or pigmented wood topcoats or clear lacquer sanding sealers, both formulated with nitrocellulose or synthetic resins to dry by evaporation without chemical reaction.

(W) Low-Solids Coatings--Coatings containing one pound or less of solids per gallon of material.

(X) Magnesite Cement Coatings--Coatings formulated for or applied to magnesite cement decking to protect the magnesite cement substrate from erosion by water.

(Y) Mastic Coating--Coatings formulated to cover holes and minor cracks and to conceal surface irregularities, excluding roof coatings, and applied in a thickness of at least 10 mils (dry, single coat).

(Z) Metallic Pigmented Coatings--Are decorative coatings, excluding industrial maintenance and roof coatings, containing at least 0.4 pounds per gallon (48 grams/liter) of coating, as applied, of elemental metallic pigment (excluding zinc).

(AA) Multi-Color Coatings--Coatings which exhibit more than one color when applied, are packaged in a single container and applied in a single coat.

(BB) Nonflat Coatings--Coatings that register a gloss of five or greater on a 60 degree meter and a gloss of 15 or greater on an 85 degree meter according to ASTM Test Method D523.

(CC) Pearlescent--Exhibiting various colors depending on the angles of illumination and viewing, as observed in mother-of-pearl.

(DD) Pigmented--Containing colorant or dry coloring matter, such as an insoluble powder, to impart color to a substrate.

(EE) Post-Consumer Coatings--Finished coatings that would have been disposed of in a landfill, having completed their usefulness to a consumer, and does not include manufacturing wastes.

(FF) Pre-Treatment Wash Primers--Coatings which contain a minimum of 0.5% acid, by weight, applied directly to bare metal surfaces to provide necessary surface etching.

(GG) Primers--Coatings applied to a surface to provide a firm bond between the substrate and subsequent coats.

(HH) Reactive Penetrating Sealers--Clear or pigmented coatings labeled and formulated for application to above-grade concrete and masonry substrates to provide protection from water and waterborne contaminants including, but not limited to, alkalis, acids, and

salts. Reactive Penetrating Sealers must meet all of the following criteria:

(i) Used only for reinforced concrete bridge structures for transportation projects within five miles of the coast or for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(ii) Penetrate into concrete and masonry substrates and chemically react to form covalent bonds with naturally occurring minerals in the substrate.

(iii) Line the pores of concrete and masonry substrates with a hydrophobic coating, but do not form a surface film.

(iv) Improve water repellency at least 80% after application on a concrete or masonry substrate. This performance must be verified on standardized test specimens, in accordance with one or more of the following standards: ASTM C67, or ASTM C97/C97M, or ASTM C140.

(v) Provide a breathable waterproof barrier for concrete or masonry surfaces that does not prevent or substantially retard water vapor transmission. This performance must be verified on standardized test specimens, in accordance with ASTM E96/E96M or ASTM D6490.

(vi) Meet the performance criteria listed in the National Cooperative Highway Research Report 244 (1981), surface chloride screening applications, for products labeled and formulated for vehicular traffic.

(II) Recycled Coatings--Coatings manufactured by a certified recycled paint manufacturer and formulated such that 50% or more of the total weight consists of secondary and post-consumer coatings and 10% or more of the total weight consists of post-consumer coatings.

(JJ) Restoration Architect--An architect that has a valid certificate of registration as an architect issued by the California State Board of Architectural Examiners or the National Council of Architectural Registration Boards and working on registered historical restoration and/or preservation projects.

(KK) Roof Coatings--Coatings formulated for application to exterior roofs for the primary purpose of preventing penetration of the substrate by water or reflecting heat and ultraviolet radiation.

(LL) Rust Preventative Coatings--Coatings formulated for use in preventing the corrosion of metal surfaces in residential and commercial situations.

(MM) Sacrificial Anti-Graffiti Coatings--Non-binding, clear coatings which are formulated and recommended for applications that allow for the removal of graffiti primarily by power washing.

(NN) Sanding Sealers--Clear wood coatings formulated for or applied to bare wood for sanding and to seal the wood for subsequent application(s) of coatings.

(OO) Sealers--Coatings applied to either block materials from penetrating into or leaching out of a substrate, to prevent subsequent coatings from being absorbed by the substrate, or to prevent harm to subsequent coatings by materials in the substrate.

(PP) Shellacs--Clear or pigmented coatings formulated solely with the resinous secretions of the lac insect (*laccifer lacca*). Shellacs are formulated to dry by evaporation without a chemical reaction providing a quick-drying, solid, protective film for priming and sealing stains and odors; and for wood finishing excluding floors.

(QQ) Specialty Primers--Coatings formulated for or applied to a substrate to seal fire, smoke or water damage, or to condition excessively chalky surfaces. An excessively chalky surface is one that is defined as having chalk rating of four or less as determined by ASTM D4214- Photographic Reference Standard No. 1 or the Federation of Societies for Coatings Technology "Pictorial Standards for Coatings Defects."

(RR) Stains--Opaque or semi-transparent coatings which are formulated to change the color but not conceal the grain pattern or texture.

(SS) Stationary Structures--include, but are not limited to, homes, office buildings, factories, mobile homes, pavements, curbs, roadways, racetracks, and bridges.

(TT) Stone Consolidants--Coatings that are labeled and formulated for application to stone substrates to repair historical structures that have been damaged by weathering or other decay mechanisms. Stone Consolidants must meet all of the following criteria:

(i) Used only for restoration and/or preservation projects on registered historical buildings that are under the purview of a restoration architect.

(ii) Penetrate into stone substrates to create bonds between particles and consolidate deteriorated material.

(iii) Specified and used in accordance with ASTM E2167.

(UU) Swimming Pool Coatings--Coatings specifically formulated for or applied to the interior of swimming pools including, but not limited to, water park attractions, ponds and fountains, to resist swimming pool chemicals.

(VV) Tile and Stone Sealers--Clear or pigmented sealers that are used for sealing tile, stone, or grout to provide resistance against water, alkalis, acids, ultraviolet light, or staining and which meet one of the following subcategories:

(i) Penetrating sealers are polymer solutions that cross-link in the substrate and must meet all of the following criteria:

(I) A fine particle structure to penetrate dense tile such as porcelain with absorption as low as 0.10% per ASTM C373, ASTM C97/C97M, or ASTM C642,

(II) Retain or increase static coefficient of friction per ANSI A137.1,

(III) Not create a topical surface film on the tile or stone, and

(IV) Allow vapor transmission per ASTM E96/96M.

(ii) Film forming sealers which leave a protective film on the surface.

(WW) Topcoat--Any final coating, applied in one or more coats, to the interior or exterior of a stationary structure or their appurtenances.

(XX) Tub and Tile Refinishing Coatings--Clear or opaque coatings that are used exclusively for refinishing the surface of a bathtub, shower, or sink and must meet all of the following criteria:

(i) Have a scratch hardness of 3H or harder and a gouge hardness of 4H or harder as determined on bonderite 1000 in accordance with ASTM D3363,

(ii) Have a weight loss of 20 milligrams or less after 1000 cycles as determined with CS-17 wheels on bonderite 1000 in accordance with ASTM D4060,

(iii) Must withstand 1,000 hours or more of exposure with few or no #8 blisters as determined on unscribed bonderite in accordance with ASTM D4585, and ASTM D714, and

(iv) Must have an adhesion rating of 4B or better after 24 hours of recovery as determined on unscribed bonderite in accordance with ASTM D4585 and ASTM D3359.

(YY) Undercoaters--Coatings formulated for or applied to substrates to provide a smooth surface for subsequent coats.

(ZZ) Varnishes--Clear or pigmented wood topcoats formulated with various resins to dry by chemical reaction.

(AAA) Waterproofing Sealers--Coatings which are formulated for the primary purpose of preventing penetration of porous substrates by water.

(BBB) Waterproofing Concrete/Masonry Sealers--Clear or pigmented sealers that are formulated for sealing concrete and masonry to provide resistance against water, alkalis, acids, ultraviolet light, or staining.

(CCC) Wood Coatings--Film forming coatings used for application to wood substrates only, which are applied to substrates including floors, decks, and porches. The Wood Coating category includes all lacquers, varnishes, and sanding sealers, regardless of whether they are clear, semi-transparent, or opaque.

(DDD) Wood Coatings, Other--The Wood Coating, Other category excludes all lacquers, varnishes, sanding sealers, wood coatings, and wood preservatives.

(EEE) Wood Conditioners--Coatings that are formulated for or applied to bare wood, prior to applying a stain, to provide uniform penetration of the stain.

(FFF) Wood Preservatives--Coatings formulated to protect wood from decay or insect attack by the addition of a wood preservative chemical registered by the United States Environmental Protection Agency.

§115.451. Exemptions.

(a) The volatile organic compounds (VOC) from coatings and solvents used in surface coating processes and associated cleaning operations not addressed by the surface coating categories in §115.421(3) - (7), (9), (10), and (13) - (16) of this title (relating to Emission Specifications) or §115.453 of this title (relating to Control Requirements) are excluded from the VOC emission calculations for the purposes of paragraphs (1) - (3) of this subsection. For example, architectural coatings applied in the field to stationary structures and their appurtenances, portable buildings, pavements, or curbs at a property would not be included in the calculations, except as specified in paragraphs (4) [~~and~~], (5), and (6) of this subsection.

(1) All surface coating processes on a property that, when uncontrolled, will emit a combined weight of VOC of less than 3.0 pounds per hour and 15 pounds in any consecutive 24-hour period are exempt from all of the requirements in §115.453 of this title except §115.453(f) - (i) of this title.

(2) Surface coating processes on a property that, when uncontrolled, will emit a combined weight of VOC of less than 100 pounds in any consecutive 24-hour period are exempt from §115.453(a) of this title if documentation is provided to and approved by both the executive director and the United States Environmental Protection Agency to demonstrate that necessary coating performance criteria cannot be achieved with coatings that satisfy applicable VOC limits and that control equipment is not technologically or economically feasible.

(3) Surface coating processes on a property where total coating and solvent usage does not exceed 150 gallons in any consecutive 12-month period are exempt from the VOC limits in §115.453(a) of this title.

(4) As of the applicable compliance date in §115.459(e) or (g) of this title, if the commission has published notice for the Dallas-Fort Worth and/or Houston-Galveston-Brazoria area in the *Texas Register,* as provided in §115.459(e) or (g) of this title, to require compliance for the applicable area with the industrial maintenance coatings contingency measure control requirements of §115.453(f) or (g) of this title, respectively, the exemptions in paragraphs (1) through (3) of this subsection no longer apply to industrial maintenance coatings. The owner or operator of a site may continue to exclude industrial maintenance coatings from the criteria in paragraphs (1) through (3) of this subsection for the purposes of determining applicability of this division for the purposes of coatings other than industrial maintenance coatings.

(5) As of the applicable compliance date in §115.459(f) or (h) of this title, if the commission has published notice for the Dallas-Fort Worth and/or Houston-Galveston-Brazoria area in the *Texas Register,* as provided in §115.459(f) or (h) of this title, to require compliance for the applicable area with the traffic marking coatings contingency measure control requirements of §115.453(h) or (i) of this title, respectively, the exemptions in paragraphs (1) through (3) of this subsection no longer apply to traffic marking coatings. The owner or operator of a site may continue to exclude traffic marking coatings from the criteria in paragraphs (1) through (3) of this subsection for the purposes of determining applicability of this division for the purposes of coatings other than traffic marking coatings.

(6) Beginning March 1, 2026, the exemptions in paragraphs (1) through (3) of this subsection no longer apply to industrial maintenance coatings, metal parts and products coatings, or architecture coatings in the Bexar County area. The owner or operator of a site may continue to exclude industrial maintenance coatings, metal parts and products coatings, and architectural coatings from the criteria in paragraphs (1) through (3) of this subsection to determine applicability of this division for the purposes of coatings other than industrial maintenance coatings, metal parts and products coatings, and architectural coatings.

(b) The following surface coating processes are exempt from the VOC limits for miscellaneous metal and plastic parts coatings in §115.453(a)(1)(C) - (F) of this title and motor vehicle materials in §115.453(a)(2) of this title:

(1) large appliance surface coating;

(2) metal furniture surface coating;

(3) automobile and light-duty truck assembly surface coating; and

(4) surface coating processes specified in §115.420(a)(1) - (9) and (11) - (16) of this title (relating to Applicability and Definitions).

(c) Paper, film, and foil surface coating processes are exempt from the coating application system requirements in §115.453(c) of this title and the coating use work practice requirements in §115.453(d)(1) of this title.

(d) Automobile and light-duty truck assembly surface coating processes are exempt from the coating application system requirements in §115.453(c) of this title and the cleaning-related work practice requirements in §115.453(d)(2) of this title.

(e) Automobile and light-duty truck assembly surface coating materials supplied in containers with a net volume of 16 ounces or less, or a net weight of 1.0 pound or less, are exempt from the VOC limits in Table 2 in §115.453(a)(3) of this title.

(f) The following miscellaneous metal part and product surface coatings and surface coating processes are exempt from the coating application system requirements in §115.453(c) of this title:

(1) touch-up coatings, repair coatings, and textured finishes;

(2) stencil coatings;

(3) safety-indicating coatings;

(4) solid-film lubricants;

(5) electric-insulating and thermal-conducting coatings;

(6) magnetic data storage disk coatings; and

(7) plastic extruded onto metal parts to form a coating.

(g) All miscellaneous plastic part airbrush surface coatings and surface coating processes where total coating usage is less than 5.0 gallons per year are exempt from the coating application system requirements in §115.453(c) of this title.

(h) The application of extreme high-gloss coatings to pleasure craft is exempt from the coating application system requirements in §115.453(c) of this title.

(i) The following miscellaneous plastic parts surface coatings and surface coating processes are exempt from the coating VOC limits in §115.453(a)(1)(D) of this title:

(1) touch-up and repair coatings;

(2) stencil coatings applied on clear or transparent substrates;

(3) clear or translucent coatings;

(4) any individual coating type used in volumes less than 50 gallons in any one year, if substitute compliant coatings are not available, provided that the total usage of all such coatings does not exceed 200 gallons per year, per property;

(5) reflective coating applied to highway cones;

(6) mask coatings that are less than 0.5 mil thick dried and the area coated is less than 25 square inches;

(7) electromagnetic interference/radio frequency interference (EMI/RFI) shielding coatings; and

(8) heparin-benzalkonium chloride-containing coatings applied to medical devices, if the total usage of all such coatings does not exceed 100 gallons per year, per property.

(j) The following automotive/transportation and business machine plastic part surface coatings and surface coating processes are exempt from the VOC limits in §115.453(a)(1)(E) of this title:

(1) texture coatings;

(2) vacuum-metalizing coatings;

(3) gloss reducers;

(4) texture topcoats;

(5) adhesion primers;

(6) electrostatic preparation coatings;

(7) resist coatings; and

(8) stencil coatings.

(k) Powder coatings and ultraviolet curable coatings applied during metal and plastic parts surface coating processes specified in §115.453(a)(1)(C) - (F) and (2) of this title are exempt from the requirements in this division, except as specified in §115.458(b)(5) of this title (relating to Monitoring and Recordkeeping Requirements).

(l) Aerosol coatings (spray paint) are exempt from the requirements in this division, except for §115.453(f) - (i) of this title.

(m) Coatings applied to test panels and coupons as part of research and development, quality control, or performance testing activities at paint research or manufacturing facilities are exempt from the requirements in this division.

(n) Pleasure craft touch-up and repair coatings supplied in containers less than or equal to 1.0 quart, are exempt from the VOC limits in §115.453(a)(1)(F) of this title provided that the total usage of all such coatings does not exceed 50 gallons per calendar year per property.

(o) Pleasure craft surface coating processes are exempt from the VOC limits in §115.453(a)(1)(C) and (D) of this title.

(p) Adhesives applied to miscellaneous metal and plastic parts listed in §115.453(a)(1)(C) - (F) and (2) of this title that meet a specific adhesive or adhesive primer application process definition in §115.470 of this title (relating to Applicability and Definitions) and are listed in Table 2 of §115.473(a) of this title (relating to Control Requirements) are not subject to the requirements in this division. Contact adhesives are not included in this exemption.

(q) In the Bexar County area, the following categories are exempt from the VOC limits in §115.453(a)(1)(C) and (D) of this title:

(1) Emulsion type bituminous pavement sealers; and

(2) Architectural coatings based on small container usage.

(A) One liter (1.057 quarts) or less:

(i) Bond Beakers;

(ii) Building Envelope Coatings;

(iii) Concrete-Curing Compounds;

(iv) Concrete Surface Retarders;

(v) Default Coatings;

(vi) Driveway Sealers;

(vii) Dry-Fog Coatings;

(viii) Faux Finishing Coatings (Clear, Topcoat, Decorative Coatings, Glazes, Japans, and Trowel Applied Coatings);

(ix) Fire-Resistive Coatings;

(x) Form Release Compound;

(xi) Graphic Arts (Sign) Coatings;

(xii) Mastic Coatings;

(xiii) Primers, Sealers, and Undercoaters;

(xiv) Recycled Coatings;

(xv) Roof Coatings;

(xvi) Roof Primer, Bituminous;

(xvii) Specialty Primers;

(xviii) Stains (Stains, Interior);

(xix) Tile and Stone Sealers;

(xx) Waterproofing Concrete/Masonry sealers; and

(xxi) Waterproofing Sealers.

(B) Eight fluid ounces or less or used for touch-up purpose only:

(i) Flat Coating;

(ii) Nonflat Coatings; and

(iii) Rust Preventive Coatings.

§115.453. Control Requirements.

(a) The following control requirements apply to surface coating processes subject to this division. Except as specified in paragraph (3) of this subsection, these limitations are based on the daily weighted average of all coatings, as defined in §101.1 of this title (relating to Definitions), as delivered to the application system. Upon the compliance date specified in §115.459(d) or (e) of this title (relating to Compliance Schedules), the requirements in subsection (f) or (h) of this section apply in the Dallas-Fort Worth area in addition to this subsection, and upon the compliance date specified in §115.459(g) or (h) of this title, the requirements in subsection (g) or (i) of this section apply in the Houston-Galveston-Brazoria area in addition to this subsection.

(1) The following limits must be met by applying low-volatile organic compound (VOC) coatings to meet the specified VOC content limits on a pound of VOC per gallon of coating basis (lb VOC/gal coating) (minus water and exempt solvent), or by applying coatings in combination with the operation of a vapor control system, as defined in §115.10 (relating to Definitions), to meet the specified VOC emission limits on a pound of VOC per gallon of solids basis (lb VOC/gal solids). If a coating meets more than one coating type definition, then the coating with the least stringent VOC limit applies.

(A) Large appliances. If a coating does not meet a specific coating type definition, then it can be assumed to be a general-use coating and the VOC limit for general coating applies.
Figure: 30 TAC §115.453(a)(1)(A) (No change.)

(B) Metal furniture. If a coating does not meet a specific coating type definition, then it can be assumed to be a general-use coating and the VOC limit for general coating applies.
Figure: 30 TAC §115.453(a)(1)(B) (No change.)

(C) Miscellaneous metal parts and products. If a coating does not meet a specific coating type definition, then it can be assumed to be a general-use coating and the VOC limit for general coating applies.
[~~Figure: 30 TAC §115.453(a)(1)(C)~~]

(i) The following VOC limits apply in the Dallas-Fort Worth and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title (relating to Definitions) These limits also apply in the Bexar County area, as defined in §115.10 of this title (relating to Definitions), until March 1, 2026.
Figure: 30 TAC §115.453(a)(1)(C)(i)

(ii) The following VOC limits apply in the Bexar County area beginning March 1, 2026.
Figure: 30 TAC §115.453(a)(1)(C)(ii)

(D) Miscellaneous plastic parts and products. If a coating does not meet a specific coating category definition, then it can be assumed to be a general-use coating and the VOC limit for general coating applies.
Figure: 30 TAC §115.453(a)(1)(D) (No change.)

(E) Automotive/transportation and business machine plastic parts. For red, yellow, and black automotive/transportation coatings, except touch-up and repair coatings, the VOC limit is determined by multiplying the appropriate limit in Table 1 of this subparagraph by 1.15.
Figure: 30 TAC §115.453(a)(1)(E) (No change.)

(F) Pleasure craft. If a coating does not meet a specific coating category definition, then it can be assumed to be a general-use coating and the VOC limits for other coatings applies.
Figure: 30 TAC §115.453(a)(1)(F) (No change.)

(2) The coating VOC limits for motor vehicle materials applied to the metal and plastic parts in paragraph (1)(C) - (F) of this subsection, as delivered to the application system, must be met using low-VOC coatings (minus water and exempt solvent).
Figure: 30 TAC §115.453(a)(2) (No change.)

(3) The coating VOC limits for automobile and light-duty truck assembly surface coating processes must be met by applying low-VOC coatings.
Figure: 30 TAC §115.453(a)(3) (No change.)

(A) The owner or operator shall determine compliance with the VOC limits for electrodeposition primer operations on a monthly weighted average in accordance with §115.455(a)(2)(D) of this title (relating to Approved Test Methods and Testing Requirements).

(B) As an alternative to the VOC limit in Table 1 of this paragraph for final repair coatings, if an owner or operator does not compile records sufficient to enable determination of the daily weighted average, compliance may be demonstrated each day by meeting a standard of 4.8 lb VOC/gal coating (minus water and exempt solvent) on an occurrence weighted average basis. Compliance with the VOC limits on an occurrence weighted average basis must be determined in accordance with the procedure specified in §115.455(a)(2) of this title.

(C) The owner or operator shall determine compliance with the VOC limits in Table 2 of this paragraph in accordance with §115.455(a)(1) or (2)(C) of this title, as appropriate.

(4) The coating VOC limits for paper, film, and foil surface coating processes must be met by applying low-VOC coatings to meet the specified VOC content limits on a pound of VOC per pound of coating basis, as delivered to the application system, or by applying coatings in combination with the operation of a vapor control system to meet the specified VOC emission limits on a pound of VOC per pound of solids basis, as delivered to the application system.
Figure: 30 TAC §115.453(a)(4) (No change.)

(5) The coating VOC limits for an architectural coating surface coating process must be met by applying low-VOC coatings.
Figure: 30 TAC §115.453(a)(5)
[~~Figure: 30 TAC §115.453(a)(5)~~]

(6) [~~(5)~~] An owner or operator applying coatings in combination with the operation of a vapor control system to meet the VOC emission limits in paragraph (1) or (4) of this subsection shall use the following equation to determine the minimum overall control efficiency necessary to demonstrate equivalency. Control device and capture efficiency testing must be performed in accordance with the testing requirements in §115.455 (a)(3) and (4) of this title.
Figure: 30 TAC §115.453(a)(6)
[~~Figure: 30 TAC §115.453(a)(5)~~]

(b) Except for the surface coating process in subsection (a)(5) of this section, the owner or operator of a surface coating process may operate a vapor control system capable of achieving a 90% overall control efficiency as an alternative to subsection (a) of this section. Control

device and capture efficiency testing must be performed in accordance with the testing requirements in §115.455(a)(3) and (4) of this title. If the owner or operator complies with the overall control efficiency option under this subsection, then the owner or operator is exempt from the application system requirements of subsection (c) of this section.

(c) The owner or operator of any surface coating process subject to this division shall not apply coatings unless one of the following coating application systems is used:

(1) electrostatic application;

(2) high-volume, low-pressure (HVLP) spray;

(3) flow coat;

(4) roller coat;

(5) dip coat;

(6) brush coat or hand-held paint rollers; or

(7) for metal and plastic parts surface coating processes specified in §115.450(a)(3) and (4) of this title (relating to Applicability and Definitions), airless spray or air-assisted airless spray; or

(8) other coating application system capable of achieving a transfer efficiency equivalent to or better than that achieved by HVLP spray. For the purpose of this requirement, the transfer efficiency of HVLP spray is assumed to be 65%. The owner or operator shall demonstrate that either the application system being used is equivalent to the transfer efficiency of an HVLP spray or that the application system being used has a transfer efficiency of at least 65%.

(d) The following work practices apply to the owner or operator of each surface coating process subject to this division.

(1) For all coating-related activities including, but not limited to, solvent storage, mixing operations, and handling operations for coatings and coating-related waste materials, the owner or operator shall:

(A) store all VOC-containing coatings and coating-related waste materials in closed containers;

(B) minimize spills of VOC-containing coatings;

(C) convey all coatings in closed containers or pipes;

(D) close mixing vessels and storage containers that contain VOC coatings and other materials except when specifically in use;

(E) clean up spills immediately; and

(F) for automobile and light-duty truck assembly coating processes, minimize VOC emissions from the cleaning of storage, mixing, and conveying equipment.

(2) For all cleaning-related activities including, but not limited to, waste storage, mixing, and handling operations for cleaning materials, the owner or operator shall:

(A) store all VOC-containing cleaning materials and used shop towels in closed containers;

(B) ensure that storage containers used for VOC-containing cleaning materials are kept closed at all times except when depositing or removing these materials;

(C) minimize spills of VOC-containing cleaning materials;

(D) convey VOC-containing cleaning materials from one location to another in closed containers or pipes;

(E) minimize VOC emissions from cleaning of storage, mixing, and conveying equipment;

(F) clean up spills immediately; and

(G) for metal and plastic parts surface coating processes specified in §115.450(a)(3) - (5) of this title (relating to Applicability and Definitions), minimize VOC emission from the cleaning of application, storage, mixing, and conveying equipment by ensuring that equipment cleaning is performed without atomizing the cleaning solvent and all spent solvent is captured in closed containers.

(3) The owner or operator of automobile and light-duty truck assembly surface coating processes shall implement a work practice plan containing procedures to minimize VOC emissions from cleaning activities and purging of coating application equipment. Properties with a work practice plan already in place to comply with requirements specified in 40 Code of Federal Regulations (CFR) §63.3094(b) (as amended through April 20, 2006 (71 FR 20464)), may incorporate procedures for minimizing non-hazardous air pollutant VOC emissions to comply with the work practice plan required by this paragraph.

(e) A surface coating process that becomes subject to subsection (a) of this section by exceeding the exemption limits in §115.451 of this title (relating to Exemptions) is subject to the provisions in subsection (a) of this section even if throughput or emissions later fall below exemption limits unless emissions are maintained at or below the controlled emissions level achieved while complying with subsection (a) of this section and one of the following conditions is met.

(1) The project that caused throughput or emission rate to fall below the exemption limits in §115.451 of this title must be authorized by a permit, permit amendment, standard permit, or permit by rule required by Chapters 106 or 116 of this title (relating to Permits by Rule; and Control of Air Pollution by Permits for New Construction or Modification, respectively). If a permit by rule is available for the project, the owner or operator shall continue to comply with subsection (a) of this section for 30 days after the filing of documentation of compliance with that permit by rule.

(2) If authorization by permit, permit amendment, standard permit, or permit by rule is not required for the project, the owner or operator shall provide the executive director 30 days notice of the project in writing.

(f) In the Dallas-Fort Worth area, in accordance with the schedule specified in 115.459(e) of this title, industrial maintenance coatings must meet a VOC limit of 2.1 pounds per gallon (250 grams per liter) of coating (minus water and exempt solvent), which must be met by applying low-VOC coatings.

(g) In the Houston-Galveston-Brazoria area, in accordance with the schedule specified in 115.459(g) of this title, industrial maintenance coatings must meet a VOC limit of 2.1 pounds per gallon (250 grams per liter) of coating (minus water and exempt solvent), which must be met by applying low-VOC coatings.

(h) In the Dallas-Fort Worth area, in accordance with the schedule specified in §115.459(f) of this title, traffic marking coatings must meet a VOC content limit of 100 grams of VOC per liter of coating (minus water and exempt solvent), which must be met by applying low-VOC coatings.

(i) In the Houston-Galveston-Brazoria area, in accordance with the schedule specified in §115.459(h) of this title, traffic marking coatings must meet a VOC content limit of 100 grams of VOC per liter of coating (minus water and exempt solvent), which must be met by applying low-VOC coatings.

(j) In the Bexar County area, industrial maintenance coatings must meet a VOC content limit of 2.1 pounds per gallon (250 grams per liter) of coating (minus water and exempt solvent), which must be met by applying low-VOC coatings.

§115.455. Approved Test Methods and Testing Requirements.

(a) Approved Test Methods and Testing Requirements. Compliance with the requirements in this division must be determined by applying one or more of the following test methods, as appropriate. As an alternative to the test methods in paragraph (1) of this subsection, the volatile organic compounds (VOC) content of coatings and, if necessary dilution solvent, may be determined by using analytical data from the material safety data sheet.

(1) The owner or operator shall demonstrate compliance with the VOC limits in §115.453 of this title (relating to Control Requirements), by applying the following test methods, as appropriate. Where a test method also inadvertently measures compounds that are exempt solvent an owner or operator may exclude the exempt solvent when determining compliance with a VOC limit. The methods include:

(A) Method 24 (40 Code of Federal Regulations (CFR) Part 60, Appendix A);

(B) American Society for Testing and Materials (ASTM) Test Methods C67, C97, C97M, C140, C309 Class B, C373, C642, D523, D714, D1186, D1200, D1644, D2832, D3359, D3363, D3794, D3960 [~~D1186-06.01, D1200-06.01, D3794-06.01, D2832-69, D1644-75, and D3960-81~~], D4060, D4214, D4585, D6490, E96/E96M, E284, E331, E2167, and E2178.

(C) the United States Environmental Protection Agency (EPA) guidelines series document "Procedures for Certifying Quantity of Volatile Organic Compounds Emitted by Paint, Ink, and Other Coatings," EPA-450/3-84-019, as in effect December, 1984;

(D) The American National Standards Institute (ANSI) A137.1 Standard Specifications for Ceramic Tiles;

(E) The National Cooperative Highway Research Report 244 (1981), "Concrete Sealers for the Protection of Bridge Structures";

(F) [~~(D)~~] additional test procedures described in 40 CFR §60.446 (as amended through October 17, 2000 (65 FR 61761)); and

(G) [~~(E)~~] minor modifications to these test methods approved by the executive director.

(2) The owner or operator shall determine compliance with the VOC limits for automobile and light-duty truck assembly coating processes in §115.453(a)(3) of this title by applying the following test methods in addition to paragraph (1) of this subsection, as appropriate. The methods include:

(A) Protocol for Determining the Daily VOC Emission Rate of Automobile and Light-Duty Truck Topcoat Operations (EPA-453/R-08-002);

(B) the procedure contained in subparagraph (A) of this paragraph for determining daily compliance with the alternative emission limitation in §115.453(a)(3) of this title for final repair. Calculation of occurrence weighted average for each combination of repair coatings (primer, specific basecoat, clearcoat) must be determined by the following procedure;

(i) the relative occurrence weighted usage calculated as follows for each repair coating:
Figure: 30 TAC §115.455(a)(2)(B)(i) (No change.)

(ii) the occurrence weighted average (Q) in pounds of VOC per gallon of coating (minus water and exempt solvents) as applied, for each potential combination of repair coatings calculated according to this subparagraph;
Figure: 30 TAC §115.455(a)(2)(B)(ii) (No change.)

(C) the procedure contained in 40 CFR Part 63, Subpart PPPP, Appendix A (as amended through April 24, 2007 (72 FR 20237)), for reactive adhesives; and

(D) the procedure contained in 40 CFR Part 60, Subpart MM (as amended October 17, 2000 (65 FR 61760)) for determining the monthly weighted average for electrodeposition primer.

(3) The owner or operator shall determine compliance with the vapor control system requirements in §115.453 of this title by applying the following test methods, as appropriate:

(A) Methods 1 - 4 (40 CFR Part 60, Appendix A) for determining flow rates, as necessary;

(B) Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Method 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis;

(D) additional performance test procedures described in 40 CFR §60.444 (as amended through October 18, 1983 (48 FR 48375)); or

(E) minor modifications to these test methods approved by the executive director.

(4) The owner or operator of a surface coating process subject to §115.453(a)(6) [~~§115.453(a)(5)~~] or (b) of this title shall measure the capture efficiency using applicable procedures outlined in 40 CFR §52.741, Subpart O, Appendix B (as amended through October 21, 1996 (61 FR 54559)). These procedures are: Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure; Procedure L - VOC Input; Procedure G.2 - Captured VOC Emissions (Dilution Technique); Procedure F.1 - Fugitive VOC Emissions from Temporary Enclosures; and Procedure F.2 - Fugitive VOC Emissions from Building Enclosures.

(A) The following exemptions apply to capture efficiency testing requirements.

(i) If a source installs a permanent total enclosure that meets the specifications of Procedure T and that directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted from capture efficiency testing requirements. This does not exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a permanent total enclosure are met during testing for control efficiency.

(ii) If a source uses a vapor control system designed to collect and recover VOC (e.g., carbon adsorption system), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR §60.433 (as amended through October 17, 2000 (65 FR 61761)), with the following additional restrictions.

(I) The source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This verification must be done within 72 hours following each 24-hour period of the 30-day period.

(II) The solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorber system); or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency must be calculated using one of the following protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the executive director and the EPA.

(i) Gas/gas method using temporary total enclosure (TTE). The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.455(a)(4)(B)(i) (No change.)

(ii) Liquid/gas method using TTE. The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.455(a)(4)(B)(ii) (No change.)

(iii) Gas/gas method using the building or room enclosure (BE) in which the affected source is located and in which the mass of VOC captured and delivered to a control device and the mass of fugitive VOC that escapes from BE are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.455(a)(4)(B)(iii) (No change.)

(iv) Liquid/gas method using a BE in which the mass of liquid VOC input to process and the mass of fugitive VOC that escapes from BE are measured while operating only the affected facility. All fans and blowers in the building or room must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.455(a)(4)(B)(iv) (No change.)

(C) The operating parameters selected for monitoring of the capture system for compliance with the requirements in §115.458(a) of this title (relating to Monitoring and Recordkeeping Requirements) must be monitored and recorded during the initial capture efficiency test and thereafter during facility operation. The executive director may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(5) Test methods other than those specified in paragraphs (1) - (4) of this subsection may be used if approved by the executive director and validated by Method 301 (40 CFR Part 63, Appendix A). For the purposes of this paragraph, substitute "executive director" each place that Method 301 references "administrator."

(b) Inspection requirements. The owner or operator of each surface coating process subject to §115.453 of this title shall provide samples, without charge, upon request by authorized representatives of the executive director, the EPA, or any local air pollution agency with jurisdiction. The representative or inspector requesting the sample will determine the amount of coating needed to test the sample to determine compliance.

§115.458. Monitoring and Recordkeeping Requirements.

(a) Monitoring requirements. The following monitoring requirements apply to the owner or operator of a surface coating process subject to this division that uses a vapor control system in accordance with §115.453 of this title (relating to Control Requirements). The owner or operator shall install and maintain monitors to accurately measure and record operational parameters of all required control devices to ensure the proper functioning of those devices in accordance with design specifications, including:

(1) continuous monitoring of the exhaust gas temperature immediately downstream of direct-flame incinerators or the gas temperature immediately upstream and downstream of any catalyst bed;

(2) the total amount of volatile organic compounds (VOC) recovered by carbon adsorption or other solvent recovery systems during a calendar month;

(3) continuous monitoring of carbon adsorption bed exhaust; and

(4) appropriate operating parameters for capture systems and control devices other than those specified in paragraphs (1) - (3) of this subsection.

(b) Recordkeeping requirements. The following recordkeeping requirements apply to the owner or operator of a surface coating process subject to this division.

(1) The owner or operator shall maintain records of the testing data or the material safety data sheets (MSDS) in accordance with the requirements in §115.455(a) of this title (relating to Approved Test Methods and Testing Requirements). The MSDS must document relevant information regarding each coating and solvent available for use in the affected surface coating processes including the VOC content, composition, solids content, and solvent density. Records must be sufficient to demonstrate continuous compliance with the applicable VOC limits in §115.453(a) and [~~or~~] (f) - (j)[~~(i)~~] of this title.

(2) Records must be maintained of the quantity and type of each coating and solvent consumed during the specified averaging period if any of the coatings, as delivered to the coating application system, exceed the applicable VOC limits. Such records must be sufficient to calculate the applicable weighted average of VOC content for all coatings.

(3) As an alternative to the recordkeeping requirements of paragraph (2) of this subsection, the owner or operator that qualifies for exemption under §115.451(a)(3) of this title (relating to Exemptions) may maintain records of the total gallons of coating and solvent used in each month and total gallons of coating and solvent used in the previous 12 months.

(4) The owner or operator shall maintain, on file, the capture efficiency protocol submitted under §115.455(a)(4) of this title. The owner or operator shall submit all results of the test methods and capture efficiency protocols to the executive director within 60 days of the actual test date. The owner or operator shall maintain records of the capture efficiency operating parameter values on-site for a minimum of one year. If any changes are made to capture or control equipment, the owner or operator is required to notify the executive director in writing within 30 days of these changes and a new capture efficiency or control device destruction or removal efficiency test may be required.

(5) The owner or operator claiming an exemption in §115.451 of this title shall maintain records sufficient to demonstrate continuous compliance with the applicable exemption criteria.

(6) Records must be maintained of any testing conducted in accordance with the provisions specified in §115.455(a) of this title.

(7) Records must be maintained a minimum of two years and be made available upon request to authorized representatives of the

executive director, the United States Environmental Protection Agency, or any local air pollution agency with jurisdiction.

§115.459. Compliance Schedules.

(a) The owner or operator of a surface coating process in Brazoria, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, and Waller Counties subject to this division shall comply with the requirements of this division, except as specified in §115.453(f) - (i) of this title (relating to Control Requirements), no later than March 1, 2013.

(b) The owner or operator of a surface coating process in Wise County shall comply with the requirements in this division, except as specified in §115.453(f) - (i) of this title, no later than January 1, 2017.

(c) The owner or operator of a surface coating process in the Bexar County area subject to the requirements of this division shall comply with all applicable [~~the~~] requirements [~~in this division~~], except for §115.453(a)(1)(C)(ii) and §115.453(a)(5) of this title, [~~no later than~~] by January 1, 2025. Compliance with §115.453(a)(1)(C)(ii), §115.453(a)(5), and §115.453(j) of this title must be achieved no later than March 1, 2026.

(d) The owner or operator of a surface coating process that becomes subject to this division on or after the applicable compliance date of this section shall comply with the requirements in this division no later than 60 days after becoming subject.

(e) The owner or operator of a surface coating process in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties shall comply with §115.453(f) of this title by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this industrial maintenance coating contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

(f) The owner or operator of a surface coating process in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties shall comply with §115.453(h) of this title by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this traffic marking coating contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

(g) The owner or operator of a surface coating process in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties shall be in compliance with §115.453(g) of this title by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this industrial maintenance coating contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failed to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

(h) The owner or operator of a surface coating process in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties shall be in compliance with §115.453(i) of this title by no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that this traffic marking coating contingency rule is necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failure to demonstrate reasonable further progress as set forth in the 1990 Amendments to the Federal Clean Air Act, §172(c)(9).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
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Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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DIVISION 6. INDUSTRIAL CLEANING SOLVENTS

30 TAC §§115.460, 115.461, 115.463, 115.465, 115.468, 115.469

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§115.460. Applicability and Definitions.

(a) Applicability. Except as specified in §115.461 of this title (relating to Exemptions), the requirements in this division apply to solvent cleaning operations in the Bexar County, Dallas-Fort Worth and Houston-Galveston-Brazoria areas, as defined in §115.10 of this title

(relating to Definitions). Residential cleaning and janitorial cleaning are not considered solvent cleaning operations.

(b) Definitions. Unless specifically defined in the Texas Clean Air Act (Texas Health and Safety Code, Chapter 382) or in §§3.2, 101.1, or 115.10 of this title (relating to Definitions), the terms in this division have the meanings commonly used in the field of air pollution control. In addition, the following meanings apply in this division unless the context clearly indicates otherwise indicates otherwise.

(1) Aerosol can--A hand-held, non-refillable container that expels pressurized product by means of a propellant-induced force.

(2) Application device--A device used to apply adhesive, coating, ink, or polyester resin materials.

(3) Application line--A portion of a motor vehicle assembly production line which applies surface and other coatings to motor vehicle bodies, hoods, fenders, cargo boxes, doors, and grill opening panels.

(4) Blanket--A synthetic rubber mat used in offset-lithography to transfer or offset an image from a planographic printing plate to the paper or other substrate.

(5) Blanket wash--A solvent used to remove ink from the blanket of a press.

(6) Cured coating, cured ink, or cured adhesive--A coating, ink, or adhesive, which is dry to the touch.

(7) Electrical and electronic components--Components and assemblies of components that generate, convert, transmit, or modify electrical energy. Electrical and electronic components include, but are not limited to, wires, windings, stators, rotors, magnets, contacts, relays, printed circuit boards, printed wire assemblies, wiring boards, integrated circuits, resistors, capacitors, and transistors. Cabinets that house electrical and electronic components are not considered electrical and electronic components. In the context of the provisions in §115.461(d), [~~and~~] (e), and (f) of this title (relating to Exemptions) and §115.463(e) and (f) of this title (relating to Control Requirements), Electronic component is defined as that portion of an assembly, including circuit card assemblies, printed wire assemblies, printed circuit boards, soldered joints, ground wires, bus bars, and other electrical fixtures, except for the actual cabinet in which the components are housed; and Electrical component is defined as an internal component such as wires, windings, stators, rotors, magnets, contacts, relays, energizers, and connections in an apparatus that generates or transmits electrical energy including, but not limited to: alternators, generators, transformers, electric motors, cables, and circuit breakers, except for the actual cabinet in which the components are housed. Electrical components of graphic arts application equipment and hot-line tools are also included in this category.

(8) Electron beam ink--An ink that dries by chemical reaction caused by high energy electrons.

(9) Facility--A business or businesses engaged in solvent cleaning operations which are owned or operated by the same person or persons and are located on the same or contiguous parcels.

(10) Grams of VOC per liter of material--The weight of VOC per volume of material and can be calculated by the following equation.
Figure: 30 TAC §115.460(b)(10) (No change.)

(11) Graphic arts--All gravure, letterpress, flexographic, and lithographic printing processes.

(12) Gravure printing-- An intaglio process in which the ink is carried in minute etched or engraved wells on a roll or cylinder. The excess ink is removed from the surface by a doctor blade.

(13) High precision optic--An optical element used in an electro-optical device and is designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes in light energy levels.

(14) Hot-line tool--A specialized tool used primarily on the transmission systems, sub-transmission systems and distribution systems for replacing and repairing circuit components or for other types of work with electrically energized circuits.

(15) Janitorial cleaning--The cleaning of building or facility components including, but not limited to, floors, ceilings, walls, windows, doors, stairs, bathrooms, furnishings, and exterior surfaces of office equipment, and excludes the cleaning of work areas where manufacturing or repair activity is performed.

(16) Letterpress printing--The method in which the image area is raised relative to the non-image area and the ink is transferred to the paper directly from the image surface.

(17) Liquid-tight food container--A paperboard container that can hold liquid food and food products without leaking even when it is held upside-down.

(18) Lithographic printing--A plane-o-graphic method in which the image and non-image areas are on the same plane.

(19) Magnet wire--Wire used in electromagnetic field application in electrical machinery and equipment such as transformers, motors, generators, and magnetic tape recorders.

(20) Magnet wire coating operation--The process of applying insulation coatings such as varnish or enamel on magnet wire where wire is continuously drawn through a coating applicator.

(21) Maintenance cleaning--A solvent cleaning operation or activity carried out to keep clean general work areas where manufacturing or repair activity is performed, to clean tools, machinery, molds, forms, jigs, and equipment. This definition does not include the cleaning of coatings, adhesives, or ink application equipment.

(22) Manufacturing process--The process of making goods or articles by hand or by machinery.

(23) Medical device--An instrument, apparatus, implement, machine, contrivance, implant, in vitro reagent or other similar article, including any component or accessory, that meets one of the following conditions:

(A) it is intended for use in the diagnosis of disease or other conditions, or in the cure, mitigation, treatment, or prevention of disease; or

(B) it is intended to affect the structure or any function of the body; or

(C) it is defined in the National Formulary of the United States Pharmacopeia, or any supplement to them.

(24) Medical device and pharmaceutical preparation operations--Medical devices, pharmaceutical products, and associated manufacturing and product handling equipment and material, work surfaces, maintenance tools, and room surfaces that are subject to the United States Federal Drug Administration current Good Manufacturing/Laboratory Practice, or Center for Disease Control or National Institute of Health guidelines for biological disinfection of surfaces.

(25) Medical or pharmaceutical work surface--An area of a medical device or pharmaceutical facility where solvent cleaning is performed on work surfaces including, but not limited to, tables, countertops, and laboratory benches. Medical or pharmaceutical work surface shall not include items defined under janitorial cleaning.

(26) Non-absorbent container--A container made of non-porous material, which does not allow the migration of the liquid solvent through it.

(27) On-press component--A part, component, or accessory of a press that is cleaned while still being physically attached to the press.

(28) On-press screen cleaning--A solvent cleaning activity carried out during press runs in screen printing operation to remove excess inks and contaminants from a screen that is still attached to the press.

(29) Packaging printing--Any lithographic, flexographic, gravure, or letterpress printing that results in identifying or beautifying paper, paperboard, or cardboard products to be used as containers, enclosures, wrappings, or boxes.

(30) Pharmaceutical product--A preparation or compound of medicinal drugs including, but not limited to, a prescription drug, analgesic, decongestant, antihistamine, cough suppressant, vitamin, mineral and herb, and is used by humans or animals for consumption to enhance personal health.

(31) Photocurable resin--A chemical material that solidifies upon exposure to light.

(32) Polyester resin operation--The fabrication, rework, repair, or touch-up of composite products for commercial, military, or industrial uses by mixing, pouring, manual application, molding, impregnating, injecting, forming, spraying, pultrusion, filament winding, or centrifugally casting with polyester resins.

(33) Precision optics--The optical elements used in electro-optical devices that are designed to sense, detect, or transmit light energy, including specific wavelengths of light energy and changes of light energy levels.

(34) Printing--In the graphic arts, is any operation that imparts color, design, alphabet, or numerals on a substrate.

(35) Removable press component--A part, component, or accessory of a press that is physically attached to the press but is disassembled and removed from the press prior to being cleaned. Rollers, blankets, metering rollers, dampening rollers, ink trays, printing plates, fountains, impression cylinders and plates shall not be considered as removable press components.

(36) Repair cleaning--A solvent cleaning operation or activity carried out during a repair process.

(37) Repair process--The process of returning a damaged object or an object not operating properly to good condition.

(38) Roller wash--A solvent used to remove ink from the rollers of a press.

(39) Scientific instrument--An instrument (including the components, assemblies, and subassemblies used in their manufacture) and associated accessories and reagents that is used for the detection, measurement, analysis, separation, synthesis, or sequencing of various compounds.

(40) Screen printing--A process in which the printing ink passes through a web or a fabric to which a refined form of stencil has been applied. The stencil openings determine the form and dimensions of the imprint.

(41) Solvent--A volatile organic compound-containing liquid used to perform solvent cleaning operations.

(42) Solvent cleaning operation--The removal of uncured adhesives, inks, and coatings; and contaminants such as dirt, soil, oil, and grease from parts, products, tools, machinery, equipment, vessels, floors, walls, and other work production-related areas using a solvent. In the context of the provisions in §115.461(d), [~~and~~] (e), and (f) this title and §115.463(e) and (f) of this title, each distinct method of cleaning in a cleaning process that consists of a series of cleaning methods shall constitute a separate solvent cleaning operation.

(43) Solvent flushing--The use of a solvent to remove uncured adhesives, uncured inks, uncured coatings, or contaminants from the internal surfaces and passages of the equipment by flushing solvent through the equipment.

(44) Specialty flexographic printing--Flexographic printing on polyethylene or polypropylene food packaging, fertilizer bags, or liquid-tight food containers.

(45) Stereolithography--A type of printing process that employs a system using a light to solidify photocurable resins in a desired configuration in order to produce a 3-dimensional object.

(46) Stripping--The removal of cured coatings, cured inks, or cured adhesives.

(47) Surface preparation--The removal of contaminants such as dust, soil, oil, grease, etc., prior to coating, adhesive, or ink applications.

(48) Ultraviolet ink--An ink that dries by polymerization reaction induced by ultraviolet energy.

(49) Volatile organic compound (VOC) composite partial pressure--The sum of the partial pressures of the compounds that meet the definition of VOC in §101.1 of this title (relating to Definitions). The VOC composite partial pressure is calculated as follows.
Figure: 30 TAC §115.460(b)(12) (No change.)

§115.461. Exemptions.

(a) Solvent cleaning operations located on a property with total actual volatile organic compounds (VOC) emissions of less than 3.0 tons per calendar year from all cleaning solvents, when uncontrolled, are exempt from the requirements of this division, except as specified in §115.468(b)(2) of this title (relating to Monitoring and Recordkeeping Requirements). When calculating the VOC emissions, solvents used for solvent cleaning operations that are exempt from this division under subsections (b) - (d), [~~and~~] (f), and (g) of this section are excluded.

(b) The owner or operator of any process or operation subject to another division of this chapter that specifies solvent cleaning operation requirements related to that process or operation is exempt from the requirements in this division.

(c) A solvent cleaning operation is exempt from this division if:

(1) the process or operation that the solvent cleaning operation is associated with is subject to another division in this chapter; and

(2) the VOC emissions from the solvent cleaning operation are controlled in accordance with an emission specification or control requirement of the division that the process or operation is subject to.

(d) The following are exempt from the VOC limits in §115.463(a) of this title (relating to Control Requirements:

(1) electrical and electronic components;

(2) precision optics;

(3) numisimatic dies;

(4) resin mixing, molding, and application equipment;

(5) coating, ink, and adhesive mixing, molding, and application equipment;

(6) stripping of cured inks, cured adhesives, and cured coatings;

(7) research and development laboratories;

(8) medical device or pharmaceutical preparation operations;

(9) performance or quality assurance testing of coatings, inks, or adhesives;

(10) architectural coating manufacturing and application operations;

(11) magnet wire coating operations;

(12) semiconductor wafer fabrication;

(13) coating, ink, resin, and adhesive manufacturing;

(14) polyester resin operations;

(15) flexographic and rotogravure printing processes;

(16) screen printing operations; and

(17) digital printing operations.

(e) If the commission publishes notice in the *Texas Register*, as provided in §115.469(d) of this title (relating to Compliance Schedules) for the Dallas-Fort Worth area, or §115.469(e) of this title for the Houston-Galveston-Brazoria area, or both areas, to require compliance with the contingency measure control requirements of §115.463(e) of this title, then the exemptions in subsections (a) - (d) of this section are no longer available, and the following exemptions apply in the applicable area as of the compliance date specified in §115.469(d) or (e) of this title.

(1) In the Dallas-Fort Worth area, in accordance with the schedule specified in §115.469(d) of this title, the following types of cleaning are exempt from the VOC content limits in §115.463(e)(1) of this title:

(A) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

(B) Cleaning conducted with performance laboratory tests on coatings, adhesives, or inks; research and development programs; and laboratory tests in quality assurance laboratories;

(C) Cleaning of paper-based gaskets, and clutch assemblies where rubber is bonded to metal by means of an adhesive;

(D) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

(E) Medical device and pharmaceutical facilities using up to 1.5 gallons per day of solvents;

(F) The cleaning of photocurable resins from stereolithography equipment and models;

(G) Cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 grams of VOC per liter;

(H) Cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 grams of VOC per liter;

(I) Touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided that the solvent used contains no more than 800 grams of VOC per liter;

(J) Cleaning carried out in batch loaded cold cleaners, vapor degreasers, conveyorized degreasers, or motion picture film cleaning equipment;

(K) Janitorial cleaning, including graffiti removal; and

(L) Stripping of cured coatings, cured ink, or cured adhesives.

(2) In the Houston-Galveston-Brazoria area, in accordance with the schedule specified in §115.469(e) of this title, the following types of cleaning are exempt from the VOC content limits in §115.463(e)(2) of this title:

(A) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

(B) Cleaning conducted with performance laboratory tests on coatings, adhesives, or inks; research and development programs; and laboratory tests in quality assurance laboratories;

(C) Cleaning of paper-based gaskets, and clutch assemblies where rubber is bonded to metal by means of an adhesive;

(D) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

(E) Medical device and pharmaceutical facilities using up to 1.5 gallons per day of solvents;

(F) The cleaning of photocurable resins from stereolithography equipment and models;

(G) Cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 grams of VOC per liter;

(H) Cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 grams of VOC per liter;

(I) Touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided that the solvent used contains no more than 800 grams of VOC per liter;

(J) Cleaning carried out in batch loaded cold cleaners, vapor degreasers, conveyorized degreasers, or motion picture film cleaning equipment;

(K) Janitorial cleaning, including graffiti removal; and

(L) Stripping of cured coatings, cured ink, or cured adhesives.

(f) In the Bexar County area, exemptions in §115.461(a) through (d) of this section do not apply after February 28, 2026. Beginning March 1, 2026, exemptions for industrial cleaning solvents from the VOC content limits specified in §115.463(f) of this title are limited to the following cleaning activities:

(1) Cleaning of solar cells, laser hardware, scientific instruments, and high-precision optics;

(2) Cleaning conducted with performance laboratory tests on coatings, adhesives, or inks; research and development programs; and laboratory tests in quality assurance laboratories;

(3) Cleaning of paper-based gaskets and clutch assemblies where rubber is bonded to metal by means of an adhesive;

(4) Cleaning of cotton swabs to remove cottonseed oil before cleaning of high-precision optics;

(5) Medical device and pharmaceutical facilities using up to 1.5 gallons per day of solvents;

(6) The cleaning of photocurable resins from stereolithography equipment and models;

(7) Cleaning of adhesive application equipment used for thin metal laminating operations provided the clean-up solvent used contains no more than 950 grams of VOC per liter;

(8) Cleaning of electronic or electrical cables provided the clean-up solvent used contains no more than 400 grams of VOC per liter;

(9) Touch up cleaning performed on printed circuit boards where surface mounted devices have already been attached provided that the solvent used contains no more than 800 grams of VOC per liter;

(10) Cleaning carried out in batch loaded cold cleaners, vapor degreasers, conveyorized degreasers, or motion picture film cleaning equipment;

(11) Janitorial cleaning, including graffiti removal; and

(12) Stripping of cured coatings, cured ink, or cured adhesives.

(g) [~~(f)~~] Cleaning solvents supplied in aerosol cans are exempt from the VOC limits in §115.463(a) of this title if total aerosol use for the property is less than 160 fluid ounces per day.

§115.463. Control Requirements.

(a) Except as specified in subsections [~~subsection~~] (e) and (f) of this section, the owner or operator shall limit the volatile organic compounds (VOC) content of cleaning solutions to:

(1) 0.42 pound of VOC per gallon of solution (lb VOC/gal solution), as applied; or

(2) limit the composite partial vapor pressure of the cleaning solution to 8.0 millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit).

(b) As an alternative to subsection (a) of this section, the owner or operator shall operate a vapor control system capable of achieving an overall control efficiency of 85% by mass. Control device and capture efficiency testing must be performed in accordance with the testing requirements in §115.465 of this title (relating to Approved Test Methods and Testing Requirements).

(c) The owner or operator of a solvent cleaning operation shall implement the following work practices during the handling, storage, and disposal of cleaning solvents and shop towels:

(1) cover open containers and used applicators;

(2) minimize air circulation around solvent cleaning operations;

(3) properly dispose of used solvent and shop towels; and

(4) implement equipment practices that minimize emissions (e.g. maintaining cleaning equipment to repair solvent leaks).

(d) A solvent cleaning operation that becomes subject to subsection (a) of this section by exceeding the exemption limits in §115.461 of this title (relating to Exemptions) is subject to the provisions in subsection (a) of this section even if throughput or emissions later fall below exemption limits unless emissions are maintained at or below the controlled emissions level achieved while complying with subsection (a) of this section and one of the following conditions is met.

(1) The project that caused throughput or emission rate to fall below the exemption limits in §115.461 of this title must be authorized by a permit, permit amendment, standard permit, or permit by rule required by Chapter 116 or Chapter 106 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification; and Permits by Rule, respectively). If a permit by rule is available for the project, the owner or operator shall continue to comply with subsection (a) of this section for 30 days after the filing of documentation of compliance with that permit by rule.

(2) If authorization by permit, permit amendment, standard permit, or permit by rule is not required for the project, the owner or operator shall provide the executive director 30 days notice of the project in writing.

(e) If the commission has published notice in the *Texas Register*, as provided in §115.469(d) or (e) of this title (relating to Compliance Schedules), to require compliance with the contingency measure control requirements for the Dallas-Fort Worth area, the Houston-Galveston-Brazoria area, or both areas the following control requirements apply instead of subsection (a) of this section.
Figure: 30 TAC §115.463(e) (No change.)

(1) In the Dallas-Fort Worth area, in accordance with the schedule specified in §115.469(d) of this title, the limits in Table 1 of this subsection apply.

(2) In the Houston-Galveston-Brazoria area, in accordance with the schedule specified in §115.469(e) of this title, the limits in Table 1 of this subsection apply.

(f) In the Bexar County area, the following control requirements apply beginning March 1, 2026.
Figure: 30 TAC §115.463(f)

§115.465. Approved Test Methods and Testing Requirements.
The owner or operator shall demonstrate compliance with the control requirements in §115.463 of this title (relating to Control Requirements) by applying the following test methods, as appropriate.

(1) Compliance with the volatile organic compound (VOC) limits in §115.463(a), [~~or~~] (e), or (f) of this title must be determined by the following methods, as applicable:

(A) Method 24 (40 Code of Federal Regulations (CFR) Part 60, Appendix A);

(B) American Society for Testing and Materials Method D2879, Standard Test Method for Vapor Pressure-Temperature Relationship and Initial Decomposition Temperature of Liquids by Isoteniscope to demonstrate compliance with §115.463(a)(2) of this title;

(C) using standard reference texts for the true vapor pressure of each VOC component to demonstrate compliance with §115.463(a)(2) of this title; or

(D) using analytical data from the cleaning solvent supplier or manufacturer's material safety data sheet.

(2) The owner or operator subject to §115.463(b) of this title shall measure the capture efficiency using applicable procedures

outlined in 40 CFR §52.741, Subpart O, Appendix B (as amended through October 21, 1996 (61 FR 54559)). These procedures are: Procedure T - Criteria for and Verification of a Permanent or Temporary Total Enclosure; Procedure L - VOC Input; Procedure G.2 - Captured VOC Emissions (Dilution Technique); Procedure F.1 - Fugitive VOC Emissions from Temporary Enclosures; and Procedure F.2 - Fugitive VOC Emissions from Building Enclosures.

(A) The following exemptions apply to capture efficiency testing requirements.

(i) If a source installs a permanent total enclosure that meets the specifications of Procedure T and that directs all VOC to a control device, then the capture efficiency is assumed to be 100%, and the source is exempted from capture efficiency testing requirements. This does not exempt the source from performance of any control device efficiency testing that may be required. In addition, a source must demonstrate all criteria for a permanent total enclosure are met during testing for control efficiency.

(ii) If a source uses a vapor control system designed to collect and recover VOC (e.g., carbon adsorption system), an explicit measurement of capture efficiency is not necessary if the following conditions are met. The overall control of the system can be determined by directly comparing the input liquid VOC to the recovered liquid VOC. The general procedure for use in this situation is given in 40 CFR §60.433 (as amended through October 17, 2000 (65 FR 61761)), with the following additional restrictions.

(I) The source must be able to equate solvent usage with solvent recovery on a 24-hour (daily) basis, rather than a 30-day weighted average. This verification must be done within 72 hours following each 24-hour period of the 30-day period.

(II) The solvent recovery system (i.e., capture and control system) must be dedicated to a single process line (e.g., one process line venting to a carbon adsorber system) or if the solvent recovery system controls multiple process lines, the source must be able to demonstrate that the overall control (i.e., the total recovered solvent VOC divided by the sum of liquid VOC input to all process lines venting to the control system) meets or exceeds the most stringent standard applicable for any process line venting to the control system.

(B) The capture efficiency must be calculated using one of the following protocols referenced. Any affected source must use one of these protocols, unless a suitable alternative protocol is approved by the executive director and the United States Environmental Protection Agency (EPA).

(i) Gas/gas method using temporary total enclosure (TTE). The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.465(2)(B)(i) (No change.)

(ii) Liquid/gas method using TTE. The EPA specifications to determine whether a temporary enclosure is considered a TTE are given in Procedure T. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.465(2)(B)(ii) (No change.)

(iii) Gas/gas method using the building or room enclosure (BE) in which the affected source is located and in which the mass of VOC captured and delivered to a control device and the mass of fugitive VOC that escapes from the BE are measured while operating only the affected facility. All fans and blowers in the BE must be operating as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.465(2)(B)(iii) (No change.)

(iv) Liquid/gas method using a BE in which the mass of liquid VOC input to process and the mass of fugitive VOC that escapes from the BE are measured while operating only the affected facility. All fans and blowers in the BE must be operated as they would under normal production. The capture efficiency equation to be used for this protocol is:
Figure: 30 TAC §115.465(2)(B)(iv) (No change.)

(C) The operating parameters selected for monitoring of the capture system for compliance with the requirements in §115.468(a) of this title (relating to Monitoring and Recordkeeping Requirements) must be monitored and recorded during the initial capture efficiency testing and thereafter during facility operation. The executive director may require a new capture efficiency test if the operating parameter values change significantly from those recorded during the initial capture efficiency test.

(3) In addition to the requirements of paragraph (2) of this section, the owner or operator shall determine compliance with §115.463(b) of this title by applying the following test methods, as appropriate:

(A) Methods 1 - 4 (40 CFR Part 60, Appendix A) for determining flow rates, as necessary;

(B) Method 25 (40 CFR Part 60, Appendix A) for determining total gaseous nonmethane organic emissions as carbon;

(C) Method 25A or 25B (40 CFR Part 60, Appendix A) for determining total gaseous organic concentrations using flame ionization or nondispersive infrared analysis; and

(D) additional performance test procedures described in 40 CFR §60.444 (as amended through October 18, 1983 (48 FR 48375)).

(4) Minor modifications to the methods in paragraphs (1) - (3) of this section may be approved by the executive director. Methods other than those specified in paragraphs (1) - (3) of this section may be used if approved by the executive director and validated using Method 301 (40 CFR Part 63, Appendix A). For the purposes of this paragraph, substitute "executive director" each place that Method 301 references "administrator."

§115.468. Monitoring and Recordkeeping Requirements.

(a) Monitoring requirements. The following monitoring requirements apply to the owner or operator of a solvent cleaning operation subject to this division that uses a vapor control system in accordance with §115.463(b) of this title (relating to Control Requirements). The owner or operator shall install and maintain monitors to accurately measure and record operational parameters of all required control devices, as necessary, to ensure the proper functioning of those devices in accordance with design specifications, including:

(1) continuous monitoring of the exhaust gas temperature immediately downstream of direct-flame incinerators or the gas temperature immediately upstream and downstream of any catalyst bed;

(2) the total amount of volatile organic compounds (VOC) recovered by carbon adsorption or other solvent recovery systems during a calendar month;

(3) continuous monitoring of carbon adsorption bed exhaust; and

(4) appropriate operating parameters for vapor control systems other than those specified in paragraphs (1) - (3) of this subsection.

(b) Recordkeeping requirements. The following recordkeeping requirements apply to the owner or operator of a solvent cleaning operation subject to this division.

(1) The owner or operator shall maintain records of the testing data, the material safety data sheet,or documentation of the standard reference texts used to determine the true vapor pressure of each VOC component, in accordance with the requirements in §115.465(1) of this title (relating to Approved Test Methods and Testing Requirements). The concentration of all VOC used to prepare the cleaning solution and, if diluted prior to use, the proportions that each of these materials is used must be recorded. Records must be sufficient to demonstrate continuous compliance with the VOC limits in §115.463(a), [~~and~~] (e), and (f) of this title.

(2) The owner or operator claiming an exemption in §115.461 of this title (relating to Exemptions) shall maintain records sufficient to demonstrate continuous compliance with the applicable exemption criteria.

(3) The owner or operator claiming exemption from this division in accordance with §115.461(c) of this title shall maintain records indicating the applicable division the process or operation is subject to as specified in §115.461(c)(1) of this title and the control requirements or emission specifications used to control the VOC emissions from the solvent cleaning operation as specified in §115.461(c)(2) of this title. The owner or operator shall also comply with the applicable recordkeeping requirements from the division the process or operation is subject to sufficient to demonstrate that the VOC emissions from the solvent cleaning operation are controlled in accordance with the control requirements or emission specifications of that division.

(4) The owner or operator shall maintain records of any testing conducted in accordance with the provisions specified in §115.465(2) - (4) of this title.

(5) Records must be maintained a minimum of two years and be made available upon request to authorized representatives of the executive director, the United States Environmental Protection Agency, or any local air pollution agency with jurisdiction.

§115.469. Compliance Schedules.

(a) In Brazoria, Chambers, Collin, Dallas, Denton, Ellis, Fort Bend, Galveston, Harris, Johnson, Kaufman, Liberty, Montgomery, Parker, Rockwall, Tarrant, Waller, and Wise Counties the compliance date has passed for control requirements in §115.463(a) - (d) of this title (relating to Control Requirements) and all associated requirements, and the owner or operator of a solvent cleaning operation shall continue to comply with the requirements in this division, except as specified in subsection (d) and (e) of this section.

(b) The owner or operator of a solvent cleaning operation in the Bexar County area subject to the requirements of this division shall comply with each applicable requirement [~~the requirements in this division no later than~~], except for §115.463(f) of this title, by January 1, 2025. Compliance with the control requirement in §115.463(f) of this title must be achieved no later than March 1, 2026.

(c) The owner or operator of a solvent cleaning operation that becomes subject to this division on or after the applicable compliance date in this section shall comply with the requirements in this division no later than 60 days after becoming subject.

(d) The owner or operator of a solvent cleaning operation in Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties shall be in compliance with the requirements of §115.463(e) of this title (relating to Control Requirements) no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that the industrial cleaning solvent contingency requirements are necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failed to demonstrate reasonable further progress as set forth in the 1990 Amendments to the federal Clean Air Act, §172(c)(9).

(e) The owner or operator of a solvent cleaning operation in Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties shall be in compliance with the requirements of §115.463(e) of this title no later than 270 days after the commission publishes notification in the *Texas Register* of its determination that the contingency requirements are necessary as a result of EPA publication of a notice in the *Federal Register* that the specified area failed to attain the applicable National Ambient Air Quality Standard for ozone by the attainment deadline or failed to demonstrate reasonable further progress as set forth in the 1990 Amendments to the federal Clean Air Act.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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For further information, please call: (512) 239-2678

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CHAPTER 117. CONTROL OF AIR POLLUTION FROM NITROGEN COMPOUNDS

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) proposes amendments to §§117.10, 117.200, 117.203, 117.205, 117.230, 117.235, 117.240, 117.245 and 117.9010.

If adopted, these rules would be submitted to the U.S. Environmental Protection Agency (EPA) as a state implementation plan (SIP) revision.

Background and Summary of the Factual Basis for the Proposed Rules

On June 20, 2024, EPA published the final reclassification of the Bexar County 2015 eight-hour ozone National Ambient Air Quality Standards (NAAQS) nonattainment area from moderate to serious, effective July 22, 2024 (89 *Federal Register* (FR) 51829). The attainment date for Bexar County under the serious classification is September 24, 2027, with a 2026 attainment year. TCEQ is required to submit serious classification attainment demonstration (AD) and reasonable further progress (RFP) SIP revisions to EPA by January 1, 2026, to comply with the serious ozone nonattainment area requirements, as outlined in federal Clean Air Act (FCAA), §§172(c), 182(c), and 182(f) for the Bexar County 2015 eight-hour ozone nonattainment area.

Nonattainment areas classified as moderate and above, including serious, are required to meet the mandates of the FCAA in §172(c)(1) and §182(c) and (f). FCAA, §172(c)(1) requires that the SIP incorporate all reasonably available control measures (RACM), including reasonably available control technology (RACT), as expeditiously as practicable and to provide for attainment of the NAAQS. FCAA, §182(c) addresses the SIP requirements for demonstrating attainment and RFP for areas classified as serious.

FCAA, §172(c) mandates that the commission submit an AD SIP revision to demonstrate that the Bexar County area will meet the NAAQS by its attainment date. Photochemical modeling for future years indicates that the Bexar County area will meet the 2015 ozone NAAQS by the mandated deadline using existing control strategies. The commission is neither required to propose nor is it proposing any amendments to demonstrate attainment for the Bexar County area in this rulemaking because the AD modeling demonstrates attainment without the need for additional measures. A RACM analysis to identify additional potential control measures that could expedite attainment of the NAAQS earlier than the area's attainment date is provided in the concurrently proposed Bexar County 2015 Ozone NAAQS Serious AD SIP Revision (Non-Rule Project No. 2024-041-SIP-NR). The RACM analysis determined that no potential control measures met the criteria to be considered RACM. As a result, no rule revisions are proposed as RACM.

FCAA, §182(f) requires the state to submit a SIP revision that implements RACT for all major sources of nitrogen oxides (NO_x). EPA defines RACT as the lowest emission limitation that a particular source is capable of meeting by the application of control technology that is reasonably available considering technological and economic feasibility (44 FR 53761, September 17, 1979). RACT requirements for moderate and higher classification ozone nonattainment areas are included in the FCAA to ensure that significant source categories at major sources of ozone precursor emissions are controlled to a reasonable extent, but not necessarily to best available control technology levels expected of new sources or to maximum achievable control technology levels required for major sources of hazardous air pollutants. Although the FCAA requires the state to implement RACT, EPA guidance provides states with the flexibility to determine the most technologically and economically feasible RACT requirements for a nonattainment area. As currently defined in 30 Texas Administrative Code (TAC) §117.10(29), a major source of NO_x is any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit a specific amount of NO_x emissions based on the area's ozone nonattainment classification. For the Bexar County serious ozone nonattainment area, a major source of NO_x is any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit at least 50 tons per year (tpy) of NO_x.

For the reclassification to serious ozone nonattainment, TCEQ reviewed the 2022 point source Emissions Inventory (EI) to identify all major sources of NO_x emissions in the Bexar County ozone nonattainment area. Since the point source EI database reports actual emissions rather than potential to emit, TCEQ reviewed sources that reported actual emissions as low as 10 tpy of NO_x to account for the difference between actual and potential emissions. TCEQ also reviewed air permits to further confirm which sites with low emissions in 2022 were major sources of NO_x due to authorized emissions of 50 or more tpy. Sites from the point source EI database with emissions of 10 tpy or more of NO_x that could not be verified as minor sources by other means were included in the RACT analysis. To evaluate what rules would be necessary to fulfill RACT requirements, TCEQ considered other Chapter 117 rules that address other ozone nonattainment areas, rules in other states, and federal rules for the unit categories identified at the major NO_x sources in the serious ozone nonattainment area. As part of this proposed rulemaking, TCEQ determined that the proposed rule revisions for the affected major NO_x sources located in the Bexar County ozone nonattainment area would fulfill RACT requirements for those sources and be consistent with or more stringent than controls implemented in other ozone nonattainment areas within the state and outside the state. Because the Bexar County 2015 eight-hour ozone NAAQS nonattainment area was previously classified as moderate, sources that emit or have the potential to emit at least 100 tpy NO_x are already required to comply with Chapter 117 RACT rules. On April 24, 2024, the commission adopted NO_x RACT rules for sources in Bexar County under the moderate classification in a Chapter 117 rulemaking (Rule Project No. 2023-117-117-AI) that was part of the Bexar County 2015 Eight-Hour Ozone Standard Moderate Nonattainment Area RACT SIP Revision (Non-Rule Project No. 2023-132-SIP-NR). This proposed rulemaking would extend implementation of RACT to all major sources of NO_x in the area that emit or have the potential to emit at least 50 tpy of NO_x.

As required by FCAA, §172(c)(1) and §182(f), the proposed rulemaking would ensure that all major sources of NO_x in the Bexar County ozone nonattainment area are subject to RACT, either by being subject to requirements that meet or exceed the applicable RACT requirements, or by determining that further emission controls on the sources in the area are either not economically feasible or not technologically feasible. Federally approved state rules and rule approval dates can be found in 40 Code of Federal Regulations (CFR) §52.2270(c), *EPA Approved Regulations in the Texas SIP*.

The commission proposes to revise Chapter 117, Subchapter B, Division 2 to change the requirements for major industrial, commercial, or institutional (ICI) sources of NO_x in the Bexar County ozone nonattainment area to address NO_x RACT requirements for serious ozone nonattainment areas. Proposed revisions would require some owners or operators of major ICI sources of NO_x in Bexar County to reduce NO_x emissions from certain stationary sources and source categories for the serious ozone nonattainment area. The proposed rulemaking would extend rule applicability of Subchapter B, Division 2 to stationary gas-fired engines fired on landfill gas, stationary diesel engines, ICI process heaters, natural gas-fired ovens, and incinerators. The proposed rulemaking would also include new emission standards for stationary gas-fired engines fired on landfill gas. Proposed rule revisions would further include new emission standards and exemptions for stationary diesel engines, process heaters, and natural gas-fired ovens. Proposed rule revisions would also include new exemptions for incinerators. The proposed rulemaking would also extend applicability of existing monitoring, testing, recordkeeping, and reporting requirements associated with Division 2 to the newly affected major sources of NO_x located in the Bexar County serious ozone nonattainment area. These monitoring, testing, recordkeeping, and reporting requirements would be necessary to ensure compliance with the new emission specifications, confirm eligibility for certain exemptions, and ensure that NO_x emission reductions are achieved from the units that become subject to the requirements of Chapter 117, Subchapter B, Division 2.

Section by Section Discussion

In addition to the proposed amendments associated with implementing RACT for the Bexar County ozone nonattainment area and specific minor clarifications and corrections discussed in greater detail in this section, this proposed rulemaking also includes various stylistic, non-substantive changes to update rule language to current *Texas Register* style and format requirements. Such changes include appropriate and consistent use

of acronyms, section references, rule structure, and certain terminology. These changes are non-substantive and generally are not specifically discussed in this preamble.

Subchapter A, Definitions

Section 117.10, Definitions

The proposal would revise the definition of major source in §117.10(29)(B) to lower the major source threshold from 100 tpy to 50 tpy for NO_x for sources in the Bexar County ozone nonattainment area. The change is necessary to address the area's reclassification to serious nonattainment for the 2015 eight-hour ozone NAAQS. Major sources affected by the proposed rulemaking would be required to comply with all applicable Chapter 117 rules by March 1, 2026, as stated in the rule compliance schedule in proposed revised §117.9010.

The proposed rulemaking would also expand the definition of unit in §117.10(51)(G) to include the list of units that would be covered under §117.205 concerning RACT emissions specifications in Bexar County. The proposed changes to §117.10(51)(G) would add process heaters and any other stationary source of NO_x at a major source, as defined in §117.10. The proposed changes to §117.10(51)(G) would also replace the term "gas-fired lean-burn stationary reciprocating internal combustion engine" with the proposed new term "stationary internal combustion engine." As with the existing definition for stationary internal combustion engine, the proposed changes to §117.10(51)(G) would specify that stationary gas-fired lean-burn engines remain subject to the requirements of Subchapter B, Division 2 and that stationary diesel engines and stationary gas-fired engines fired on landfill gas would also become subject to the requirements of Subchapter B, Division 2. Because the emission reductions required by the RACT provisions necessitate further reductions from additional unit categories not previously covered, the proposed revisions broaden the applicability of the definition of unit to include any other stationary source of NO_x at a major source, including those units that may qualify for a proposed exemption.

Subchapter B, Combustion Control at Major Industrial, Commercial, and Institutional Sources in Ozone Nonattainment Areas

Division 2, Bexar County Ozone Nonattainment Area Major Sources

Section 117.200, Applicability

The proposed rulemaking would expand the applicability of Subchapter B, Division 2 to include additional unit categories under §117.200. Section 117.200 currently applies to stationary gas turbines, duct burners used in turbine exhaust ducts, and gas-fired lean-burn stationary reciprocating internal combustion engines located at a major source of NO_x in the Bexar County ozone nonattainment area. Proposed changes would add ICI process heaters and natural gas-fired ovens, flares, and incinerators to the list of applicable units. The term "gas-fired lean-burn stationary reciprocating internal combustion engines" in §117.200(3) is proposed to be replaced with the new term, "stationary internal combustion engines." Considering that the existing definition of stationary internal combustion engines in §117.10(46) addresses any reciprocating engine that satisfies the time in residence requirement of the definition, revising §117.200(3) to apply to stationary internal combustion engines would cover not only gas-fired lean-burn stationary reciprocating internal combustion engines, but also stationary diesel engines and stationary gas-fired engines fired on landfill gas. All known diesel-fuel fired and gaseous-fuel fired stationary engines at major NO_x sources in the Bexar County ozone nonattainment area that are not identified as stationary turbines are reciprocating internal combustion engines.

The commission proposes to add new paragraphs (4) through (7) in §117.200 to expand applicability of the rule provisions of Subchapter B, Division 2 to ICI process heaters and natural gas-fired ovens, flares, and incinerators. These unit categories were identified in the 2022 point source EI at NO_x major sources in the Bexar County ozone nonattainment area.

Section 117.203, Exemptions

Existing §117.203 lists the units that are exempt from the provisions of Chapter 117, Subchapter B, Division 2. The commission notes that the existing rule provision reference to §117.245(f)(9) in §117.203 is an error. Section 117.245(f) currently does not contain a paragraph (9). Therefore, the existing reference to §117.245(f)(9) in §117.203 is proposed to be deleted. Because the commission proposes a new §117.245(f)(7) to specify recordkeeping requirements concerning diesel engines and operating restrictions, the commission proposes a new rule provision reference to proposed new §117.245(f)(7) in §117.203. Because the commission further proposes a new §117.205(e) to specify operating restrictions for owners or operators of stationary diesel engines, the commission proposes a new rule provision reference to proposed new §117.205(e) in §117.203.

Proposed revised paragraph (1) would replace the term gas-fired lean-burn stationary reciprocating internal combustion engines with the term stationary internal combustion engines. This proposed change would coincide with the proposed change to §117.200(3) to list stationary internal combustion engines as applicable units subject to the provisions of Subchapter B, Division 2. With this proposed change, owners or operators of gas-fired lean-burn stationary reciprocating internal combustion engines, stationary diesel engines, and stationary gas-fired engines fired on landfill gas would be able to claim an exemption based on dedicated use. The allowed dedicated uses eligible for an exemption are listed in subparagraphs (A) through (E) of paragraph (1).

Existing §117.203(1)(D) provides for an exemption for owners or operators of stationary gas turbines and gas-fired lean-burn stationary reciprocating internal combustion engines that are used exclusively in emergency situations, as defined in §117.10(15), except that operation of the unit for testing or maintenance purposes of the unit is allowed for up to 100 hours per year, on a rolling 12-month basis. For an owner or operator of a stationary diesel engine used exclusively in emergency situations, as defined in §117.10(15), to claim this exemption, proposed revisions to subparagraph (D) would specify that a stationary diesel engine would have to be placed into service before March 1, 2026. The proposed change would make clear that any new stationary diesel engine and any modified, reconstructed, or relocated existing stationary diesel engine placed into service on or after March 1, 2026, would be ineligible for the exemption under proposed revised subparagraph (D). For the purposes of this exemption, the terms "modification" and "reconstruction" have the meanings defined in 30 TAC §116.10 and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in 30 TAC §101.1, a used engine from anywhere outside that account.

This proposed change would mirror similar provisions in other parts of Chapter 117 for other ozone nonattainment areas for owners or operators of stationary diesel engines claiming an ex-

emption based on dedicated emergency use. The proposed change to subparagraph (D) provides owners or operators of existing stationary diesel engines that are used solely for emergency reasons the opportunity to continue to rely on such units without having to modify an engine, install post-combustion controls, or replace a unit to meet proposed NO_x emission specifications so long as the existing unit is never modified or reconstructed, nor is an existing unit ever relocated from outside the area to a major source of NO_x in the Bexar County ozone nonattainment area, on or after the proposed threshold date. These changes to the existing exemption are proposed due to the relatively small NO_x emissions contribution in the area from these sources due to their limited, dedicated use or the impracticality of using NO_x emissions controls during such limited operating times. A threshold date is proposed in §117.203(1)(D) to ensure the net effect is that existing stationary diesel engines, if used exclusively in emergency situations and placed into service before the proposed threshold date, would be exempt from the new emission specifications in proposed new §117.205(a)(3)(B), whereas new, modified, reconstructed, or relocated stationary diesel engines placed into service on or after March 1, 2026, would be required to be cleaner diesel engines. New, modified, reconstructed, or relocated stationary diesel engines placed into service on or after March 1, 2026, would be required to meet federal Tier 4 emission standards for non-road diesel engines in effect at the time of installation, modification, reconstruction, or relocation. These proposed measures would leverage the natural replacement cycle of equipment and ensure that as older stationary diesel engines reach the end of their operational life, and turnover of older, higher-emitting stationary diesel engines occurs, the replacement units would be cleaner diesel engines. The gradual modernization of stationary diesel engines in the Bexar County area would lead to consistent decreases in NO_x emissions, helping the area comply with more stringent NAAQS.

The proposed changes to §117.203 would also add a new §117.203(2) to exempt existing stationary diesel engines located at major sources of NO_x in the Bexar County ozone nonattainment area that are placed into service before March 1, 2026, and operate less than 100 hours per calendar year on a rolling 12-month basis. The proposed new §117.203(2) would not exempt any modified, reconstructed, or relocated stationary diesel engine placed into service on or after March 1, 2026. For the purposes of this exemption, the terms "modification" and "reconstruction" have the meanings defined in 30 TAC §116.10 and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in 30 TAC §101.1, a used engine from anywhere outside that account. This exemption in proposed new §117.203(2) would be similar in effect to the proposed revisions to §117.203(1)(D) in that an owner or operator of an existing stationary diesel engine could continue to operate the unit provided the unit would not be altered on or after the rule compliance date. This would help to ensure that the same NO_x emissions profile from the existing unit could be expected in the future. This would also help to ensure that all NO_x emissions from any existing unit already located in the nonattainment area and any existing unit that may be moved into the area, thus considered new, are accounted for during SIP development. Based on reported information in the 2022 point source EI, the commission does not anticipate owners or operators of existing stationary diesel engines placed into service before the proposed threshold date of March 1, 2026, would be unable to meet the proposed operating hour requirement of less than 100 hours per calendar year based on a rolling 12-month basis.

The proposed changes to §117.203 would further add a new §117.203(3) to exempt new, modified, reconstructed, or relocated stationary diesel engines located at major sources of NO_x in the Bexar County ozone nonattainment area if the new, modified, reconstructed, or relocated stationary diesel engine is placed into service on or after March 1, 2026, operates less than 100 hours per calendar year on a rolling 12-month basis and meets the corresponding NO_x emission standard for non-road engines listed in 40 CFR §1039.101, Table 1 (effective July 29, 2021), and in effect at the time of installation, modification, reconstruction, or relocation. Operating time during emergency situations, as defined in §117.10(15), would be excluded from the limit on operating hours under proposed new §117.203(3). For the purposes of this exemption, the terms "modification" and "reconstruction" have the meanings defined in 30 TAC §116.10 and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in 30 TAC §101.1, a used engine from anywhere outside that account. Similar to the proposed revisions to §117.203(1)(D) and proposed new §117.203(2), owners or operators of existing units could continue to operate their existing units as they previously had provided the units would not be altered on or after the proposed threshold date of March 1, 2026. Furthermore, these and the other proposed new requirements for stationary diesel engines would ensure that as turnover of older, higher-emitting stationary diesel engines occurs, the replacement units would be cleaner diesel engines.

Existing paragraphs (2) and (3) in §117.203 are proposed to be renumbered to paragraphs (4) and (5), respectively. Existing paragraph (2), renumbered as paragraph (4), concerning exempt units, continues to apply to gas-fired lean-burn stationary internal combustion engines rated less than 50 horsepower (hp) and fired on any type of gaseous fuel other than landfill gas. The commission also proposes to remove the word "reciprocating" from the term "gas-fired lean-burn stationary reciprocating internal combustion engines" in existing paragraph (2), renumbered as paragraph (4), because, for purposes of Chapter 117, the concept of a reciprocating engine is implied with stationary engines as opposed to rotary engines. For purposes of Chapter 117, rotary engines are considered stationary turbines, and the existing definition for stationary internal combustion engine in §117.10 already includes the term "reciprocating." Existing paragraph (3), renumbered as paragraph (5), concerning exempt units, continues to apply to stationary gas turbines with a maximum rated capacity less than 10.0 million British thermal units per hour (MMBtu/hr). Existing paragraph (3), renumbered as paragraph (5), would further include the new acronym "MMBtu/hr" for "million British thermal units per hour."

The commission proposes new §117.203(6) to specify that ICI process heaters with a maximum rated capacity equal to or less than 5.0 MMBtu/hr are exempt from the provisions of Subchapter B, Division 2. The commission identified nine process heaters in the 2022 point source EI, with all nine units located at the same major source of NO_x in the Bexar County ozone nonattainment area. Because three units had reported heat input equal to or less than 5.0 MMBtu/hr, the commission anticipates that these three units would qualify for exemption from the proposed rulemaking. Because the remaining six units had reported heat inputs equal to or greater than the proposed exemption threshold of 5.0 MMBtu/hr, these six units are anticipated to require NO_x emission reductions to meet the proposed NO_x emission specification requirements for ICI process heaters in proposed revised §117.205. This exemption level is proposed in §117.203 due to

the relatively small contribution of NO_x emissions from units that are equal to or less than 5.0 MMBtu/hr and the impracticality of installing and maintaining NO_x controls on such units for this proposed rulemaking.

The proposed rulemaking would specify in new §117.203(7) that natural gas-fired ovens with a maximum rated capacity equal to or less than 5.0 MMBtu/hr are exempt from the provisions of Subchapter B, Division 2. The commission identified seven ovens in the 2022 point source EI, with all seven units located at the same major source of NO_x in the Bexar County ozone nonattainment area. Because three units had reported heat input equal to or less than 5.0 MMBtu/hr, the commission anticipates that these three units would qualify for exemption from the proposed rulemaking. Because the remaining four units had reported heat inputs equal to or greater than the proposed exemption threshold of 5.0 MMBtu/hr, these four units are anticipated to require NO_x emission reductions to meet the proposed NO_x emission specification requirements for natural gas-fired ovens in proposed revised §117.205. Similar to the exemption proposed for ICI process heaters, this exemption level for natural gas-fired ovens is proposed due to the relatively small contribution of NO_x emissions from units that are equal to or less than 5.0 MMBtu/hr and the impracticality of installing and maintaining NO_x controls on such units for this proposed rulemaking.

Proposed new §117.203(8) would add an exemption for flares from the provisions of Subchapter B, Division 2. Proposed new §117.203(9) would exempt incinerators with a maximum rated capacity less than 40 MMBtu/hr from the provisions of Subchapter B, Division 2. The proposed exemptions for these unit types located at major sources of NO_x in the Bexar County ozone nonattainment area are consistent with existing exemptions for the Dallas-Fort Worth (DFW) eight-hour ozone nonattainment area major sources, in existing §117.403(a)(3), and for the Houston-Galveston-Brazoria (HGB) ozone nonattainment area major sources, in existing §117.303(a)(4). The commission identified four incinerators in the 2022 point source EI at major sources of NO_x in the Bexar County ozone nonattainment area, with all four units expected to qualify for exemption under proposed new §117.203(9). Existing §117.203(4) is proposed to be renumbered as §117.203(10).

Section 117.205, Emission Specifications for Reasonably Available Control Technology (RACT)

The commission proposes to revise §117.205(a)(3) as part of a broader effort to include additional types of stationary internal combustion engines located at major sources of NO_x. Currently, §117.205(a)(3) specifies NO_x emission limits for only gas-fired lean-burn engines not fired on landfill gas. The proposed revision would expand these specifications to include two additional engine types: gas-fired lean-burn engines fired on landfill gas and diesel engines. Proposed new §117.205(a)(3)(A)(i) would specify that gas-fired lean-burn engines fired on landfill gas would be subject to a NO_x emission standard of 0.60 grams per horsepower-hour (g/hp-hr). The landfill gas fired in these stationary engines is a byproduct of the decomposition of organic waste in a nearby municipal solid waste landfill, with methane composing much of the waste gas. The proposed Bexar County NO_x emission specification for stationary engines that are fired on landfill gas is based on the NO_x emission specification for similar units located at NO_x major sources in the DFW eight-hour ozone nonattainment area, §117.410(a)(4)(B)(ii)(I), and in the HGB ozone nonattainment area, §117.310(a)(9)(B)(i), respectively. The proposed emission specification of 0.60 g/hp-hr in §117.205(a)(3)(A)(i) is expected to be achievable through combustion modifications. The existing NO_x emission standard of 0.50 g/hp-hr in §117.205(a)(3), for gas-fired lean-burn stationary reciprocating internal combustion engines, is proposed to be moved to new §117.205(a)(3)(A)(ii).

The proposed changes to §117.205(a)(3) further add a new subparagraph (B) that would establish NO_x emission standards for stationary diesel engines based on the size of the stationary diesel engine and the date the engine was installed, modified, reconstructed, or relocated in the Bexar County ozone nonattainment area. The proposed NO_x standards in new §117.205(a)(3)(B) are based on EPA's Tier 4 emission standards for non-road diesel engines listed in 40 CFR §1039.101, Table 1 (effective July 29, 2021). While EPA's Tier 4 emission standards are also based on engine size, they differ from TCEQ's standards in proposed new §117.205(a)(3)(B) in that they are also based on the engine model year and the dedicated end-use for larger diesel engines.

With promulgation of the new Tier 4 diesel emission standards in 40 CFR Part 1039, EPA established another comprehensive, new program to phase in more stringent Tier 4 emission standards for all diesel engine sizes, similar to its earlier rulemaking efforts for the Tier 2 and Tier 3 emission standards. The Tier 4 emission standards were phased in beginning with model year 2008, requiring lower standards for certain engine sizes and model years 2011 and 2012, and being fully implemented by 2015. Some of the Tier 4 NO_x emission standards for certain engine sizes and model years overlap with some of EPA's prior tier emission standards.

Because some of EPA's Tier 4 exhaust emission standards for diesel engines are expressed in terms of nonmethane hydrocarbons (NMHC) + NO_x, the commission used Table 7: *Tier 2 and Tier 3 Combined and Estimated Pollutant-Specific Emissions Standards for Nonroad Diesel Engines* from EPA's *Exhaust and Crankcase Emission Factors for Nonroad Engine Modeling--Compression-Ignition, Report No. NR-009C* (EPA420-P-04-009, revised April 2004) to split the combined NMHC + NO_x Tier 4 standards into single pollutant emission standards for NO_x, where necessary.

Proposed new §117.205(a)(3)(B)(i) - (iv) would establish NO_x emissions performance standards for stationary diesel engines rated less than 25 hp and through 750 hp and that are installed, modified, reconstructed, or relocated on or after March 1, 2026. Proposed new §117.205(a)(3)(B)(v) would establish a NO_x emission specification for stationary diesel engines rated greater than 750 hp that are electric generator sets and are installed, modified, reconstructed, or relocated on or after March 1, 2026. Proposed new §117.205(a)(3)(B)(vi) would establish a NO_x emission specification for stationary diesel engines rated greater than 750 hp that exclude electric generator sets and are installed, modified, reconstructed, or relocated on or after March 1, 2026.

Proposed revisions to §117.205(a) include a new paragraph (4) to specify new NO_x emission specifications for process heaters located at NO_x major sources in the Bexar County ozone nonattainment area. Proposed new §117.205(a)(4)(A) would include a NO_x emission specification of 0.025 pounds per million British thermal units (lb/MMBtu) for process heaters with a maximum rated capacity equal to or greater than 40 million British thermal units per hour (MMBtu/hr). Proposed new §117.205(a)(4)(B) would include a NO_x emission limit of 0.036 lb/MMBtu (or alternatively, 30 parts per million by volume (ppmv), at 3.0% oxygen (O_2), dry basis) for process heaters with a maximum rated capac-

ity less than 40 MMBtu/hr. Post-combustion NO_x control such as selective catalytic reduction (SCR) may be necessary for some gas-fired process heaters with a maximum rated capacity equal to or greater than 40 MMBtu/hr to comply with the proposed 0.025 lb/MMBtu emission specification. Given advancements in burner technology to produce the same output with fewer NO_x emissions, some units of this size category may be able to meet the proposed limit of 0.025 lb/MMBtu through combustion modifications such as low-NO_x burners (LNB), or more specifically the next generation of LNB or ultra low-NO_x burners (ULNB). Owners or operators of gas-fired process heaters with maximum rated capacities less than 40 MMBtu/hr may be required to install LNB, ULNB, or make other combustion modifications to comply with the proposed 0.036 lb/MMBtu (or 30 ppmv, at 3.0% O_2, dry) emission specification. No liquid-fired process heaters were identified in the 2022 point source EI in the Bexar County ozone nonattainment area; however, SCR may be necessary for a liquid-fired process heater to comply with the proposed emission specifications. The NO_x emission standards for units located in Bexar County are proposed at the same NO_x performance level for ICI process heaters located at major NO_x sources in the DFW eight-hour ozone nonattainment area, §117.410(a)(3), and in the HGB ozone nonattainment area, §117.310(a)(8)(A), respectively.

Proposed new §117.205(a)(5) would establish a 0.036 lb/MMBtu NO_x emission specification for natural gas-fired ovens used in industrial, commercial, or institutional processes. This proposed new emission specification is anticipated to be achievable through combustion modifications, such as burner modifications or installation of LNB or possibly ULNB. The proposed emission limit in new §117.205(a)(5) aligns with the NO_x emission specification for natural gas-fired ovens subject to §117.410(a)(12) for the DFW eight-hour ozone nonattainment area. The commission did not identify in the 2022 point source EI for the Bexar County ozone nonattainment area any ovens using fuels other than natural gas. However, for ovens using fuels other than natural gas, particularly liquid fuels, NO_x emissions controls in addition to or beyond burner modifications, LNB, or ULNB may be necessary.

The commission further proposes a new §117.205(a)(6) to establish a NO_x emission specification for incinerators that would not qualify for the proposed exemption under proposed new §117.203(9). Owners or operators of these units would be required to comply with a 0.030 lb/MMBtu emission specification. While this proposed emission specification for incinerators may be achievable through installation of LNB or through other combustion modifications, SCR may be necessary to achieve the 0.030 lb/MMBtu emission specification. This proposed new NO_x limit for incinerators in the Bexar County ozone nonattainment area is set at the same NO_x performance level as for incinerators subject to the provisions of Subchapter B, Divisions 3 and 4 for the HGB and DFW areas (§117.310(a)(16)(B) and §117.410(a)(9)(B)), respectively.

Proposed revisions to §117.205(b), concerning NO_x averaging times for units subject to a NO_x emission specification under §117.205(a), include repealing existing §117.205(b)(1) and proposing it as new §117.205(b)(2), with amendments. Proposed new §117.205(b)(2) would specify that compliance with the NO_x emission specifications in §117.205(a) must be determined on a block one-hour averaging time, in the units of the applicable NO_x emission specification, for units that do not operate with a NO_x continuous emission monitoring system (CEMS) or predictive emission monitoring system (PEMS) under §117.240 of Subchapter B, Division 2. Proposed new §117.205(b)(2) would provide for the same requirements as existing §117.205(b)(1) and further specify that the block one-hour averaging time would apply to owners or operators of units that do not operate with a NO_x CEMS or PEMS. Proposed new §117.205(b)(2) further includes a new provision for owners or operators of process heaters in the Bexar County ozone nonattainment area by providing an alternative NO_x averaging time for demonstrating compliance with the NO_x limits in §117.205(a). If a process heater that is subject to §117.205(a) is not operated with a NO_x CEMS or PEMS under §117.240, under proposed new §117.205(b)(2) the owner or operator may choose to calculate the actual NO_x emissions rate from the unit on a pounds per hour basis by multiplying the unit's maximum rated capacity by the unit's applicable NO_x emission specification in lb/MMBtu and using this calculated result to show compliance with the applicable specifications in Subchapter B, Division 2. Under this alternative NO_x averaging time, where the owner or operator shows compliance on a block one-hour average in pounds per hour as opposed to on a block one-hour average in the units of the applicable NO_x emission specification, the calculated value for the process heater would be compared to the performance evaluation result obtained through the emissions stack testing that would be required by the initial demonstration of compliance provisions under §117.235 of Subchapter B, Division 2. This alternative would allow for a direct comparison between the calculated theoretical emissions and the measured actual emissions, providing an alternative method to verify compliance with the applicable NO_x standard.

Existing §117.205(b)(2) is proposed to be renumbered as §117.205(b)(1), and three new subparagraphs would also be added. For units, except process heaters, that operate with a NO_x CEMS or PEMS under §117.240, the owner or operator would be able to choose between two different NO_x averaging times to show compliance with the NO_x emission specifications in §117.205(a). Proposed new §117.205(b)(1)(A) offers flexibility to comply with the specifications in §117.205(a) on a 30-day rolling average in the units of the applicable emission standard. Proposed new §117.205(b)(1)(B) offers flexibility to comply with the specifications in §117.205(a) on a block one-hour average in the units of the applicable emission standard. The owner or operator of a process heater in the Bexar County ozone nonattainment area would have an additional option in proposed new §117.205(b)(1)(C). As an alternative to the 30-day rolling average in the units of the applicable emission standard in proposed new §117.205(b)(1)(A) and to the block one-hour average in the units of the applicable emission standard in proposed new §117.205(b)(1)(B), proposed new §117.205(b)(1)(C) for process heaters would offer flexibility to comply with the specifications in §117.205(a) on a block one-hour average in pounds per hour. Like the alternative for process heaters under proposed new §117.205(b)(2), with amendments, the owner or operator may choose to calculate the actual NO_x emissions rate from the unit on a pounds per hour basis by multiplying the unit's maximum rated capacity by the unit's applicable NO_x emission specification in lb/MMBtu and using this calculated result to show compliance with the applicable NO_x emission specifications in Subchapter B, Division 2. The commission further proposes to rearrange the wording of the NO_x averaging time for 30 days from "rolling 30-day average" to "30-day rolling average," to keep use of this term within the chapter consistent with how the term is worded within its definition in §117.10.

The reclassification of the Bexar County ozone nonattainment area to serious resulted in the identification of additional major source NO_x emissions units, including flares and incinerators. For purposes of ozone attainment, it is necessary to prevent circumvention due to the transfer of NO_x emissions associated with chemical-bound nitrogen from a unit under which these emissions would be controlled to a unit that is not subject to the NO_x emission specifications in §117.205(a), and therefore uncontrolled. Proposed changes to §117.205(d) add a new paragraph (3) that would prohibit changes to a unit subject to a NO_x emission specification in §117.205(a) that would result in increased NO_x emissions from a unit that is not subject to the NO_x emission specifications in §117.205(a). An example of this type of change that would be prohibited under proposed new §117.205(d)(3) would be redirecting one or more fuel or waste streams containing chemical-bound nitrogen to an incinerator with a maximum rated capacity less than 40 MMBtu/hr, or a flare. The redirection of the fuel or waste stream would result in increased NO_x emissions from the unit not subject to a NO_x emission specification in §117.205(a). Consequently, these additional NO_x emissions would not have been accounted for in the SIP revision for the ozone nonattainment area and either deemed insignificant or not needing additional NO_x emissions control. The proposed prohibition threshold date of December 19, 2019, was the modeling base year for the attainment demonstration SIP revision required at the time that the Bexar County ozone nonattainment area was classified as moderate. The 2019 base year was also used in the concurrent proposed Bexar County 2015 ozone NAAQS serious attainment demonstration SIP revision, thus the December 19, 2019, date remains appropriate for the prohibition threshold. Therefore, any changes after December 19, 2019, to a unit subject to §117.205(a) that would result in increased NO_x emissions from another unit not subject to §117.205(a) would be prohibited, unless certain criteria are met, as explained below.

An owner or operator would be allowed to make such changes that would otherwise be prohibited under proposed new §117.205(d)(3) only if both of the conditions under proposed new §117.205(d)(3)(A) and (B) were satisfied. Under proposed new §117.205(d)(3)(A), the increase in NO_x emissions from the unit not subject to the NO_x emission specifications in §117.205(a) must be determined either using a NO_x CEMS or PEMS that meets the requirements in §117.240 of Subchapter B, Division 2 or through emissions stack testing that meets the requirements in §117.235 of Subchapter B, Division 2. Under proposed new §117.205(d)(3)(B), emission credits that are equal to the increase in NO_x emissions from the unit not subject to the NO_x emission specifications in §117.205(a) must be obtained and used in accordance with §117.9800 of Subchapter H, Division 2. Any change to a unit subject to §117.205(a) that resulted in increased NO_x emissions from another unit not subject to §117.205(a) after December 19, 2019, and before the effective date of this proposed rulemaking, if adopted, would still be prohibited. Existing §117.205(d)(3) is proposed as renumbered §117.205(d)(4).

Proposed revisions to §117.205 further include a new subsection (e) that would prohibit an owner or operator of a stationary diesel engine in the Bexar County ozone nonattainment area from starting or operating the stationary diesel engine between the hours of 6:00 a.m. and noon for testing or maintenance of the engine itself, with three specified exceptions to the prohibition. This proposed new requirement on starting or operating restrictions for stationary diesel engines would delay the emissions of NO_x, a key ozone precursor, until after noon (12:00 p.m.) to limit ozone formation. Proposed new §117.205(e)(1) would allow the starting or operation of the stationary diesel engine between the hours of 6:00 a.m. and noon if it is for a manufacturer's specific recommended testing requiring a run of over 18 consecutive hours. Proposed new §117.205(e)(2) would allow the starting or operation of the stationary diesel engine between the hours of 6:00 a.m. and noon if it is to verify reliability of emergency equipment (e.g., emergency generators or pumps) immediately after unforeseen repairs. Routine maintenance, such as an oil change, is not considered to be an unforeseen repair since it can be scheduled outside the 6:00 a.m. to noon time period. Finally, proposed new §117.205(e)(3) would allow the starting or operation of the stationary diesel engine between the hours of 6:00 a.m. and noon if it is for the purpose of using firewater pumps that are used for emergency response training conducted between April 1 and October 31 of a calendar year.

Section 117.230, Operating Requirements

The commission proposes a new subsection (a) in existing §117.230 to require that the owner or operator of any unit subject to the NO_x emission specifications in §117.205(a) must operate the unit in compliance with those limitations. The existing introductory rule text in §117.230 is moved to new subsection (b) in §117.230. The commission further proposes in new paragraphs (1) - (2) of proposed renumbered §117.230(b) operational requirements for owners or operators of process heaters that use forced draft flue gas recirculation (FGR) or induced draft FGR for control of NO_x emissions. Proposed new §117.230(b)(3) would specify operational requirements for owners or operators of units that use steam or water injection for control of NO_x emissions. Existing §117.230(1) is proposed to be renumbered as §117.230(b)(4). Existing §117.230(2) is proposed to be renumbered as §117.230(b)(5). Similar to the existing provisions under §117.230(1) and (2), before proposed changes, for operational requirements for post-combustion NO_x control techniques and gas-fired lean-burn stationary engines, the purpose of proposed new §117.230(b)(1) - (3) is to require that equipment be operated in such a manner as to reduce NO_x emissions over the entire operating range. These proposed new requirements would ensure that NO_x reductions are achieved, particularly for units that operate without a NO_x emissions monitor, i.e. a NO_x CEMS or PEMS. Finally, the commission proposes in renumbered §117.230(b)(5) to replace the term "gas-fired lean-burn stationary reciprocating internal combustion engine" with the new term "stationary internal combustion engine." This proposed change in existing §117.230(2), renumbered as §117.230(b)(5), would require that all stationary internal combustion engines covered under Subchapter B, Division 2, and not only gas-fired lean-burn stationary engines, must be checked for proper engine operation according to §117.8140(b) of Subchapter G, Division 2. This change would be necessary to be consistent with the proposed changes for new §117.205(a)(3) as part of this proposed rulemaking.

Section 117.235, Initial Demonstration of Compliance

The commission proposes in revised §117.235(a) that the owner or operator of any NO_x emissions unit that does not qualify for an exemption from the NO_x emission specifications in Subchapter B, Division 2 is required to conduct emissions performance testing for each unit that is subject to a NO_x emission specification of the division.

The commission proposes in revised §117.235(e) to specify that for units operating without a NO_x emissions monitor, the initial

demonstration of compliance with the NO_x emission specifications of Subchapter B, Division 2 must be performed according to the requirements in §117.8000 of Subchapter G, Division 1. The word "initially" was previously not part of the rule provision language for §117.235(e). Proposed revisions to §117.235(e) would follow the same intent as existing requirements in §117.235(f).

Proposed revisions to §117.235(f) include minor rewording to the subsection to make clear that if an owner or operator of a unit subject to the emission specifications in §117.205(a) is required or otherwise elects to use a NO_x CEMS or PEMS, which must be installed, calibrated, maintained, and operated in accordance with §117.240 of Subchapter B, Division 2, the NO_x monitor must undergo monitor certification testing first before being used to monitor NO_x emissions from the unit for both the initial compliance demonstration required under §117.235 and ongoing compliance demonstrations required under §117.240. Requirements for a NO_x specification on a block one-hour average are deleted from §117.235(f) and moved to new §117.235(f)(2), as described below.

The commission proposes a new §117.235(f)(1) to specify how an owner or operator demonstrating compliance with proposed revised §117.235(f) must determine the NO_x emissions from the unit to demonstrate initial compliance with the emission specifications of §117.205(a) for an emission specification expressed in units of lb/MMBtu and based on a 30-day rolling average. Proposed new §117.235(f)(2) would specify how an owner or operator demonstrating compliance with proposed revised §117.235(f) must determine the NO_x emissions from the unit to demonstrate initial compliance with the emission specifications of §117.205(a) for an emission specification on a block one-hour average. These rule provisions for demonstrating initial compliance with the applicable NO_x emission specifications for owners or operators of units operating with a NO_x monitor align with other similar provisions that exist in other parts of Chapter 117, specifically in §117.435(e)(1) and (2) for the DFW eight-hour ozone nonattainment area and in §117.335(f)(1) and (2) for the HGB ozone nonattainment area, respectively. To be consistent with the two options for the NO_x averaging time provided in proposed renumbered §117.205(b)(1), notwithstanding the third option specific to owners or operators of process heaters choosing compliance in units of pounds per hour, proposed new subsection (f)(1) and (2) are necessary for owners or operators of units operating with a NO_x monitor to show compliance depending on the averaging time chosen by the owner or operator. If a 30-day rolling average is chosen under proposed new §117.205(b)(1)(A), the owner or operator is required to comply with proposed new §117.235(f)(1). If a block one-hour average is chosen under proposed new §117.205(b)(1)(B), the owner or operator is required to comply with proposed new §117.235(f)(2).

Proposed new §117.235(f)(1) would specify that the calculated initial 30-day average emission rate must be used to show initial compliance with the applicable NO_x emission specification in §117.205(a). The 30-day average emission rate is calculated as the total NO_x emissions from a unit, in pounds, during a 30-day test period divided by the total heat input to the unit, in MMBtu, during the same 30-day test period. Any 30-day test period may be chosen by the owner or operator so long as the unit operates for 30 successive days for the NO_x emissions monitoring to occur. Proposed new §117.235(f)(2) would specify that any one-hour period of NO_x emissions monitoring using the certified NO_x monitor, while the unit operates at its maximum rated capacity, or as near thereto as practicable, must be used to show initial compliance with the applicable NO_x emission specification in §117.205(a). Any one-hour period may be used by the owner or operator of the unit since a NO_x emissions monitor used in compliance with Chapter 117 must be able to show compliance with EPA's regulations under 40 CFR Part 60 or Part 75, EPA-compliant NO_x emissions monitors provide hourly averages of NO_x emissions, and the averaging time for the initial compliance demonstration is on an hourly basis.

Section 117.240, Continuous Demonstration of Compliance

Existing §117.240(a)(2) provides alternatives to the requirements of §117.240(a)(1). The commission proposes to revise §117.240(a)(2)(C) by replacing the term "gas-fired lean-burn stationary reciprocating internal combustion engines" with the new term, "stationary internal combustion engines." This change would be necessary because the commission is proposing to expand the applicability of the rule provisions of Subchapter B, Division 2 to additional types of stationary engines. Proposed revised §117.240(a)(2)(C) would therefore specify that the alternative in existing §117.240(a)(2)(C) to the totalizing fuel flow metering requirement in §117.240(a)(1) would be available to an owner or operator of any stationary internal combustion engine that triggers applicability under proposed revised §117.200.

Existing §117.240(b)(2) specifies that units subject to the NO_x CEMS requirements of 40 CFR Part 75 are not required to install a NO_x CEMS or PEMS under §117.240(b). The commission proposes to expand §117.240(b)(2) to incorporate new provisions for stationary diesel engines. The commission proposes to move the existing exception provided to units subject to 40 CFR Part 75 to a proposed new §117.240(b)(2)(A). Proposed new §117.240(b)(2)(B) would provide an exception for owners or operators of stationary diesel engines with SCR systems from the requirement to install a NO_x CEMS or PEMS. To qualify for the exception, the stationary diesel engine must operate with an SCR emissions control system for NO_x and meet all the criteria in proposed new §117.240(b)(2)(B)(i) - (vi). Stationary diesel engines operated in this manner are expected to be newer diesel engines that would already be certified to EPA's Tier 4 emission standards in 40 CFR §1039.101, Table 1 (effective July 29, 2021). Currently, most diesel engine manufacturers incorporate SCR emissions control systems to produce engines that can be certified to EPA's Tier 4 emission standards for NO_x. The SCR emissions control system built into the operational design of the diesel engine makes the operation of the diesel engine without the SCR practically impossible. The criteria specified in proposed new §117.240(b)(2)(B)(i) - (iv) are from 40 CFR Part 1039, Subpart B for monitoring reductant use and unit and control system diagnostic functions. Consequently, an owner or operator of a stationary diesel engine operating with an SCR system and according to the conditions in proposed new §117.240(b)(2)(B) would not need to monitor exhaust NO_x with a NO_x CEMS or PEMS under §117.240(b). The proposed rule provisions for stationary diesel engines under §117.240(b)(2)(B) do not waive the requirement for an owner or operator to demonstrate initial compliance with the NO_x emission specifications of Subchapter B, Division 2 according to §117.235, ongoing compliance with the engine monitoring requirements in §117.240(e), or ongoing compliance with the retesting provisions in §117.240(h)(2), if retesting is triggered.

Similar to the proposed revision to §117.240(a)(2)(C), proposed revisions to §117.240(e) include replacing the term, gas-fired lean-burn stationary reciprocating internal combustion engine, with the new term, stationary internal combustion engine. Like

other changes proposed in this rulemaking for stationary engines, this change would be necessary to extend existing engine monitoring requirements to all stationary engines that would trigger applicability to the rule provisions of Subchapter B, Division 2 through proposed revised §117.200. The commission also proposes to add language to §117.240(e) to make clear that the requirement to stack test is for engines that are not equipped with a NO_x CEMS or PEMS. For stationary engines not required to operate with a NO_x monitor, or for those units for which the owner or operator elects not to use a NO_x monitor, owners or operators of stationary engines that trigger the engine emissions monitoring requirement under §117.240(e) would be required to conduct periodic emissions testing in accordance with the provisions in §117.8140(a). This requirement to conduct periodic emissions testing for stationary engines exists in §117.440(h) for stationary gas engines in the DFW eight-hour ozone nonattainment area and in §117.340(h) for all stationary engines in the HGB ozone nonattainment area.

Section §117.240(f) requires owners or operators of stationary gas turbines or gas-fired lean-burn stationary reciprocating internal combustion engines to record the unit's operating time with a non-resettable elapsed run time meter if the unit is claimed exempt using the exemption in §117.203(1)(D). Proposed revised §117.240(f) would extend the existing run time meter and operating time recording requirement to owners or operators of units claimed exempt using the exemptions in proposed new §117.203(2) or in proposed new §117.203(3). Like other proposed changes for stationary engines in this proposed rulemaking, the commission proposes to also replace the term gas-fired lean-burn stationary reciprocating internal combustion engine with the new term stationary internal combustion engine in proposed revised §117.240(f). These proposed new inclusions for §117.240(f) would mirror, as necessary, existing rule provision requirements for stationary gas turbines and stationary internal combustion engines for units claimed exempt in the DFW eight-hour ozone nonattainment area, in §117.440(i), and in the HGB ozone nonattainment area, in §117.340(j).

To be consistent with the proposed clarification in §117.240(e) concerning stationary engines that do not operate with a NO_x emissions monitor, either a CEMS or PEMS, the commission proposes to clarify in §117.240(h)(2) that for units not operating with a NO_x monitor, owners or operators of such units must retest their units, as specified in §117.235, within 60 days after any modification to a unit that could reasonably be expected to increase the NO_x emissions rate from the modified unit. The NO_x emissions retesting would be conducted according to §117.235(a), (e), and (g) of Subchapter B, Division 2. The emissions retesting provision in §117.240(h)(2) applies to any unit subject to a NO_x emission specification in §117.205(a) that does not use a NO_x monitor and for which a modification occurs that could reasonably be expected to increase the NO_x emissions rate from the unit.

Section 117.245, Notification, Recordkeeping, and Reporting Requirements

The commission proposes to move the existing notification requirements for owners or operators of units subject to the NO_x emission specifications in §117.205(a) from §117.245(b) to new paragraphs (1) and (2) within the subsection. The purpose is to make clearer, by separating into two new paragraphs, the existing notification requirements for emissions testing conducted under §117.235, in proposed new §117.245(b)(1), and the existing notification requirements for NO_x monitor performance evaluations conducted under §117.240, in proposed new §117.245(b)(2).

Proposed revisions to §117.245(e) include replacing the existing term, "gas-fired engine," with the new term, "stationary internal combustion engine." This change would be necessary to be consistent with the other changes proposed in this rulemaking to extend the applicability of the rule provisions of Subchapter B, Division 2 to additional stationary engine types. Therefore, owners or operators of stationary gas-fired lean-burn engines not fired on landfill gas, stationary gas-fired engines fired on landfill gas, and stationary diesel engines, subject to the NO_x emission specifications of §117.205(a), would be required to report in writing to the commission on a semiannual basis any excess emissions and air-fuel ratio monitoring system performance, as applicable.

The current rule provision reference to §117.230(a)(2) in §117.245(e)(1) is proposed to be revised to new §117.230(b)(5) to be consistent with the proposed changes to §117.230. The commission further notes that the current rule provision reference to §117.230(a)(2) is incorrect; the correct current rule provision reference is §117.230(2).

The commission proposes to remove the word "daily" from existing §117.245(f)(2)(B) because current rule provisions under Subchapter B, Division 2 do not specify any NO_x emission specifications on a daily basis. Current rule provisions under §117.205 and §117.235 specify compliance only on either a one-hour or a 30-day basis for units that operate with a NO_x CEMS or PEMS. Proposed changes to §117.245(f)(3)(A)(i) would include revising the current rule provision reference from §117.230(2) to new §117.230(b)(5). This change would be necessary pursuant to the changes proposed to §117.230 of Subchapter B, Division 2. Section §117.245(f)(3)(A) specifies requirements for owners or operators of stationary internal combustion engines, subject to the NO_x emission specifications of Subchapter B, Division 2, to maintain records of emissions measurements required by new §117.230(b)(5) and §117.240(e) of the division.

Proposed changes to §117.245(f)(4) would include adding rule provision references to new §117.203(2) and (3) to include the proposed new exemptions for stationary diesel engines that operate less than 100 hours per year based on a rolling 12-month basis. Section §117.245(f)(4) specifies requirements for owners or operators of units claimed exempt from the emission specifications of Subchapter B, Division 2. For exemptions based on hours per year of operation, maintaining records of monthly hours of operation is required. For exemptions based on dedicated use, keeping records of the unit's purpose of use is required. Furthermore, the commission proposes to add to §117.245(f)(4) a rule provision reference to the definition of emergency situation in §117.10(15). The term itself already exists within the rule provision text of §117.245(f)(4). The purpose is to remind owners or operators of potentially affected units that the term is defined for purposes of Chapter 117, and not all situations that may occur may qualify as an emergency situation for purposes of Chapter 117.

Proposed revisions to §117.245(f) concerning recordkeeping requirements include a new paragraph (7) for owners or operators of stationary diesel engines subject to the operating restrictions in proposed new §117.205(e). Similar to existing provisions for owners or operators of stationary diesel engine in the DFW eight-hour ozone nonattainment area, in §117.445(f)(9), and in the HGB ozone nonattainment area, in §117.345(f)(10), proposed new §117.245(f)(7) would require owners or operators to maintain records of each time a stationary diesel engine is op-

erated for testing and maintenance of the engine itself, including the date(s) of engine operation; the start and end times of engine operation; the identification of the engine; and the total hours of engine operation for each month and for the most recent 12 consecutive months. This proposed new recordkeeping requirement would apply for each stationary diesel engine that is subject to the operating restrictions of §117.240(e) to ensure compliance with the proposed restriction on operating hours for testing and maintenance of a stationary diesel engine.

Subchapter H, Administrative Provisions

Division 1, Compliance Schedules

Section 117.9010, Compliance Schedule for Bexar County Ozone Nonattainment Major Sources

Proposed revisions to §117.9010(a) include new paragraphs (1) and (2) to specify when owners or operators of units subject to the requirements of Subchapter B, Division 2 are required to demonstrate compliance with those requirements. Proposed new §117.9010(a)(1) would preserve prior compliance deadlines for submittal of the control plan and all other requirements of Chapter 117, Subchapter B, Division 2 for units subject to the NO_x emission specifications in §117.205(a) that were subject to the prior definition of "Major source" for the Bexar County ozone nonattainment in §117.10(29)(B) before the effective date of this current rulemaking - those that emit or have the potential to emit equal to or greater than 100 tpy of NO_x. The prior compliance deadline of January 1, 2025, for control plans is proposed in new §117.9010(a)(1)(A). The prior compliance deadline of January 1, 2025, for all other requirements of Subchapter B, Division 2, when the area was classified as moderate ozone nonattainment, is proposed in new §117.9010(a)(1)(B). Proposed new §117.9010(a)(1)(B) further specifies that units that were required to demonstrate compliance by January 1, 2025, must continue to demonstrate compliance with the requirements of Subchapter B Division 2. Finally, the commission proposes in new §117.9010(a)(1)(C) that for units that became subject to the NO_x emission specifications in §117.205(a) after January 1, 2025, compliance with the requirements of Subchapter B, Division 2 is required as soon as practicable but no later than 60 days after becoming subject. These changes are intended to provide clarity and distinguish between the prior compliance deadline of January 1, 2025, in proposed new §117.9010(a)(1)(A) - (C) relating to the compliance date for the Bexar County ozone nonattainment area under a moderate classification and the proposed new deadlines in new §117.9010(a)(2). These proposed changes in §117.9010(a) are not intended to change the existing requirements for those units that had a rule provision compliance deadline of January 1, 2025.

Proposed new §117.9010(a)(2)(A) - (B) would specify the compliance deadlines for units subject to the NO_x emission specifications of §117.205(a) that become subject to the proposed revised definition of "Major Source" for the Bexar County ozone nonattainment area in proposed revised §117.10(29)(B). The commission proposes a compliance deadline of February 1, 2026, in proposed new §117.9010(a)(2)(A) for submission of the control plan required by §117.252 and March 1, 2026, in proposed new §117.9010(a)(2)(B) for demonstrating compliance with all other applicable requirements of Chapter 117, Subchapter B, Division 2. The compliance date assures that NO_x reductions would occur by the start of ozone season in Bexar County in 2026, the year used to determine attainment with the 2015 eight-hour ozone NAAQS.

The commission does not propose any changes to existing §117.9010(b), which specifies that the owner or operator of any stationary source of NO_x that becomes subject to the requirements of Chapter 117, Subchapter B, Division 2 on or after the applicable compliance date specified in subsection (a) of the section must comply with the requirements of the division as soon as practicable, but no later than 60 days after becoming subject to the requirements of the division. Considering the reclassification of the Bexar County ozone nonattainment area and the new NO_x major source threshold, an owner or operator of any stationary source of NO_x that becomes subject to the requirements of proposed revised Subchapter B, Division 2 on or after March 1, 2026, must comply with the requirements of Chapter 117, Subchapter B, Division 2 as soon as practicable, but no later than 60 days after becoming subject. For example, owners or operators of new units placed into service on or after March 1, 2026, would be required to demonstrate compliance with the requirements of the division within 60 days after startup of the unit. Owners or operators of existing units previously claimed exempt from the rule provisions but no longer qualifying for exemption after March 1, 2026, would be required to demonstrate compliance with the requirements of the division by no later than 60 days after the unit no longer qualifies for the previously claimed exemption.

Fiscal Note: Costs to State and Local Government

Kyle Girten, Analyst in the Budget and Planning Division, has determined that for the first five-year period the proposed rules are in effect, no significant fiscal implications are anticipated for TCEQ during implementation of the proposed rule. No fiscal implications are anticipated for other state or local government entities.

Public Benefits and Costs

Mr. Girten determined that for each year of the first five years the proposed rules are in effect, the public benefit anticipated will be compliance with federal law and continued protection of the environment and public health and safety combined with efficient and fair administration of NO_x emission standards for Bexar County. Corrections of errors and other non-substantive changes within the rule would also benefit the public.

Costs would be incurred for affected businesses operating in Bexar County for implementation of requirements appliable to RACT. Revisions to §117.10 would lower the threshold for major sources from 100 tpy to 50 tpy NO_x in Bexar County, so any sources emitting or with the potential to emit 50-100 tpy NO_x in Bexar County would be impacted by this rulemaking. Additionally, revisions to Subchapter B, Division 2 would expand the applicability of RACT requirements as applicable to NO_x to include gas engines fired on landfill gas, diesel engines, boilers, process heaters, ovens, and incinerators, so any applicable requirements in Chapter 117 would apply to all major sources with these technologies.

It is estimated that four businesses would be affected by this rulemaking. This includes one landfill/waste-to-gas management plant with five stationary diesel engines and four flares (subject to federal new source review requirements); one waste-to-gas energy production plant with six stationary gas-fired, lean-burn engines; one petroleum refinery with nine process heaters, four stationary diesel engines, two incinerators, and two flares (subject to federal new source review requirements); and one vehicle automotive manufacturer plant with two incinerators and seven ovens.

For the landfill/waste-to-gas management plant, total costs are estimated at $24,000-$39,000 for the first, third, and fifth year after the rulemaking is in effect, and $9,400-$18,400 in years two and four. Capital purchases were assumed to be annualized over 15 years with an 8.25% rate on the loan. Costs include purchase of new Tier 2, Tier 3, and Tier 4 diesel engines and other equipment, operating and maintenance costs, the purchase and operation of flow meters, and costs associated with stack testing.

For the waste-to-gas energy production plant, total costs are estimated at $35,000 in years one, three, and five and $5,800 in years two and four. Capital purchases were assumed to be annualized over 15 years with an 8.25% rate on the loan. Costs include the purchase of flow meters, annual operating and maintenance costs, stack testing costs, and costs associated with recordkeeping and reporting. None of the six engines at this site are anticipated to need to implement additional controls to meet proposed emissions specifications for stationary gas-fired, lean burn engines fired on landfill gas.

For the petroleum refinery, total costs are estimated at $199,000 in year one and $154,600 in years two through five. Capital purchases were assumed to be annualized over 15 years with an 8.25% rate on the loan. Costs include the purchase of ultra-low-NO_x burners for six process heaters, tests of the burners, the purchase of flow meters, the purchase of non-resettable run time meters for four stationary diesel engines, stack testing costs, and costs associated with recordkeeping and reporting. It is assumed that four stationary diesel engines would qualify for an exemption, either based on dedicated use or low operational use; and two incinerators would qualify for an exemption based on unit size.

For the vehicle automotive manufacturer, total costs are estimated at $22,000 in year one and $2,200 in years two through five. Capital purchases were assumed to be annualized over 15 years with an 8.25% rate on the loan. Costs include the purchase of flow meters, operating and maintenance costs, stack testing costs, and costs associated with recordkeeping and reporting. It is assumed that two incinerators and three of the gas-fired ovens would qualify for an exemption from requirements based on unit size. The remaining four ovens are not anticipated to require additional control measures.

Local Employment Impact Statement

The commission reviewed this proposed rulemaking and determined that a Local Employment Impact Statement is not required because the proposed rulemaking is not anticipated to adversely affect a local economy in a significant way for the first five years that the proposed rule is in effect.

Rural Communities Impact Assessment

The commission reviewed this proposed rulemaking and determined that the proposed rulemaking does not adversely affect rural communities in a material way for the first five years that the proposed rules are in effect. This rulemaking applies to Bexar County, which has a large population; therefore, rural communities are not significantly impacted.

Small Business and Micro-Business Assessment

No adverse fiscal implications are anticipated for small or micro-businesses due to the implementation or administration of the proposed rule for the first five-year period the proposed rules are in effect. No small businesses have been identified that would be affected by this rulemaking.

Small Business Regulatory Flexibility Analysis

The commission reviewed this proposed rulemaking and determined that a Small Business Regulatory Flexibility Analysis is not required because the proposed rule does not adversely affect a small or micro-business in a material way for the first five years the proposed rules are in effect.

Government Growth Impact Statement

The commission prepared a Government Growth Impact Statement assessment for this proposed rulemaking. The proposed rulemaking does not create or eliminate a government program and will not require an increase or decrease in future legislative appropriations to the agency. The proposed rulemaking does not require the creation of new employee positions, eliminate current employee positions, nor require an increase or decrease in fees paid to the agency. The proposed rulemaking amends an existing regulation, and it does not increase or decrease the number of individuals subject to its applicability. During the first five years, the proposed rule should not impact positively or negatively the state's economy.

Draft Regulatory Impact Analysis Determination

The commission reviewed the proposed rulemaking in light of the regulatory impact analysis requirements of Texas Government Code, §2001.0225 and determined that the proposed rulemaking does not meet the definition of a major environmental rule as defined in that statute, and in addition, if it did meet the definition, would not be subject to the requirement to prepare a regulatory impact analysis. A major environmental rule means a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure, and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state. Additionally, the proposed rulemaking does not meet any of the four applicability criteria for requiring a regulatory impact analysis for a major environmental rule, which are listed in Tex. Gov't Code Ann., §2001.0225(a). Section 2001.0225 of the Texas Government Code applies only to a major environmental rule, the result of which is to: 1) exceed a standard set by federal law, unless the rule is specifically required by state law; 2) exceed an express requirement of state law, unless the rule is specifically required by federal law; 3) exceed a requirement of a delegation agreement or contract between the state and an agency or representative of the federal government to implement a state and federal program; or 4) adopt a rule solely under the general powers of the agency instead of under a specific state law.

The specific intent of these proposed rules is to comply with federal requirements for the implementation of control strategies necessary to attain and maintain the NAAQS for ozone mandated by 42 United States Code (USC), 7410, FCAA, §110 and required to be included in operating permits by 42 USC, §7661a, FCAA, §502, as specified elsewhere in this preamble. The proposed rulemaking addresses RACT requirements for the Bexar County 2015 eight-hour ozone nonattainment area as discussed elsewhere in this preamble. States are required to adopt SIPs with enforceable emission limitations and other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of the FCAA. As discussed in the FISCAL NOTE portion of this preamble, the proposed rules are not anticipated to add any significant additional costs

to affected individuals or businesses beyond what is necessary to attain the ozone NAAQS on the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector of the state.

If a state does not comply with its obligations under 42 USC, §7410, FCAA, §110 to submit SIPs, states are subject to discretionary sanctions under 42 USC, §7410(m) or mandatory sanctions under 42 USC, §7509, FCAA, §179; as well as the imposition of a federal implementation plan (FIP) under 42 USC, §7410, FCAA, §110(c). Under 42 USC, §7661a, FCAA, §502, states are required to have federal operating permit programs that provide authority to issue permits and assure compliance with each applicable standard, regulation, or requirement under the FCAA, including enforceable emission limitations and other control measures, means, or techniques, which are required under 42 USC, §7410, FCAA, §110. Similar to requirements in 42 USC, §7410, FCAA, §110, states are not free to ignore requirements in 42 USC, §7661a, FCAA, §502 and must develop and submit programs to provide for operating permits for major sources that include all applicable requirements of the FCAA. Lastly, states are also subject to the imposition of sanctions under 42 USC, §7661a(d) and (i), FCAA, §502(d) and (i) for failure to submit an operating permits program, the disapproval of any operating permits program, or failure to adequately administer and enforce the approved operating permits program.

The requirement to provide a fiscal analysis of regulations in the Texas Government Code was amended by Senate Bill (SB) 633 during the 75th legislative session in 1997. The intent of SB 633 was to require agencies to conduct a regulatory impact analysis of extraordinary rules. These are identified in the statutory language as major environmental rules that will have a material adverse impact and will exceed a requirement of state law, federal law, or a delegated federal program, or are adopted solely under the general powers of the agency. With the understanding that this requirement would seldom apply, the commission provided a cost estimate for SB 633 that concluded "based on an assessment of rules adopted by the agency in the past, it is not anticipated that the bill will have significant fiscal implications for the agency due to its limited application." The commission also noted that the number of rules that would require assessment under the provisions of the bill was not large. This conclusion was based, in part, on the criteria set forth in the bill that exempted rules from the full analysis unless the rule was a major environmental rule that exceeds a federal law. Because of the ongoing need to meet federal requirements, the commission routinely proposes and adopts rules incorporating or designed to satisfy specific federal requirements. The legislature is presumed to understand this federal scheme. If each rule proposed by the commission to meet a federal requirement was considered to be a major environmental rule that exceeds federal law, then each of those rules would require the full regulatory impact analysis (RIA) contemplated by SB 633. Requiring a full RIA for all federally required rules is inconsistent with the conclusions reached by the commission in its cost estimate and by the Legislative Budget Board (LBB) in its fiscal notes. Since the legislature is presumed to understand the fiscal impacts of the bills it passes, and that presumption is based on information provided by state agencies and the LBB, the that the intent of SB 633 was only to require the full RIA for rules that are extraordinary in nature. While the proposed rules may have a broad impact, that impact is no greater than is necessary or appropriate to meet the requirements of the FCAA, and in fact creates no additional impacts since the proposed rules do not impose burdens greater than required to demonstrate attainment of the ozone NAAQS as discussed elsewhere in this preamble. For these reasons, the proposed rules fall under the exception in Texas Government Code, §2001.0225(a), because they are required by, and do not exceed, federal law.

The commission has consistently applied this construction to its rules since this statute was enacted in 1997. Since that time, the legislature has revised the Texas Government Code, but left this provision substantially unamended. It is presumed that "when an agency interpretation is in effect at the time the legislature amends the laws without making substantial change in the statute, the legislature is deemed to have accepted the agency's interpretation." (*Central Power & Light Co. v. Sharp*, 919 S.W.2d 485, 489 (Tex. App. Austin 1995), *writ denied with per curiam opinion respecting another issue*, 960 S.W.2d 617 (Tex. 1997); *Bullock v. Marathon Oil Co.*, 798 S.W.2d 353, 357 (Tex. App. Austin 1990, *no writ*). *Cf. Humble Oil & Refining Co. v. Calvert*, 414 S.W.2d 172 (Tex. 1967); *Dudney v. State Farm Mut. Auto Ins. Co.*, 9 S.W.3d 884, 893 (Tex. App. Austin 2000); *Southwestern Life Ins. Co. v. Montemayor*, 24 S.W.3d 581 (Tex. App. Austin 2000, *pet. denied*); and *Coastal Indust. Water Auth. v. Trinity Portland Cement Div.*, 563 S.W.2d 916 (Tex. 1978).) The commission's interpretation of the RIA requirements is also supported by a change made to the Texas Administrative Procedure Act (APA) by the legislature in 1999. In an attempt to limit the number of rule challenges based upon APA requirements, the legislature clarified that state agencies are required to meet these sections of the APA against the standard of "substantial compliance" (Texas Government Code, §2001.035). The legislature specifically identified Texas Government Code, §2001.0225 as falling under this standard.

As discussed in this analysis and elsewhere in this preamble, the commission has substantially complied with the requirements of Texas Government Code, §2001.0225. The proposed rulemaking implements the requirements of the FCAA as discussed in this analysis and elsewhere in this preamble. The proposed rules were determined to be necessary to attain the ozone NAAQS and are required to be included in permits under 42 USC, §7661a, FCAA, §502 and will not exceed any standard set by state or federal law. These proposed rules are not an express requirement of state law. The proposed rules do not exceed a requirement of a delegation agreement or a contract between state and federal government, as the proposed rules, if adopted by the commission and approved by EPA, will become federal law as part of the approved SIP required by 42 U.S.C. §7410, FCAA, §110. The proposed rules were not developed solely under the general powers of the agency but are authorized by specific sections of Texas Health and Safety Code, Chapter 382 (also known as the Texas Clean Air Act), and the Texas Water Code, which are cited in the Statutory Authority section of this preamble, including Texas Health and Safety Code, §§382.011, 382.012, and 382.017. Therefore, this proposed rulemaking action is not subject to the regulatory analysis provisions of Texas Government Code, §2001.0225(b).

The commission invites public comment regarding the Draft Regulatory Impact Analysis Determination during the public comment period. Written comments on the Draft Regulatory Impact Analysis Determination may be submitted to the contact person at the address listed under the Submittal of Comments section of this preamble.

Takings Impact Assessment

Under Texas Government Code, §2007.002(5), taking means a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or §17 or §19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action; and is the producing cause of a reduction of at least 25% in the market value of the affected private real property, determined by comparing the market value of the property as if the governmental action is not in effect and the market value of the property determined as if the governmental action is in effect. The commission completed a takings impact analysis for the proposed rulemaking action under the Texas Government Code, §2007.043.

The primary purpose of this proposed rulemaking action, as discussed elsewhere in this preamble, is to meet federal requirements for the implementation of control strategies necessary to attain and maintain the NAAQS for ozone mandated by 42 United States Code (USC), 7410, FCAA, §110 and required to be included in operating permits by 42 USC, §7661a, FCAA, §502. The proposed rulemaking addresses RACT requirements for the Bexar County 2015 eight-hour ozone nonattainment area as discussed elsewhere in this preamble.

States are required to adopt SIPs with enforceable emission limitations and other control measures, means, or techniques, as well as schedules and timetables for compliance, as may be necessary or appropriate to meet the applicable requirements of the FCAA. If a state does not comply with its obligations under 42 USC, §7410, FCAA, §110 to submit SIPs, states are subject to discretionary sanctions under 42 USC, §7410(m) or mandatory sanctions under 42 USC, §7509, FCAA, §179; as well as the imposition of a FIP under 42 USC, §7410, FCAA, §110(c). Under 42 USC, §7661a, FCAA, §502, states are required to have federal operating permit programs that provide authority to issue permits and assure compliance with each applicable standard, regulation, or requirement under the FCAA, including enforceable emission limitations and other control measures, means, or techniques, which are required under 42 USC, §7410, FCAA, §110. Similar to requirements in 42 USC, §7410, FCAA, §110, regarding the requirement to adopt and implement plans to attain and maintain the national ambient air quality standards, states are not free to ignore requirements in 42 USC, §7661a, FCAA, §502 and must develop and submit programs to provide for operating permits for major sources that include all applicable requirements of the FCAA. Lastly, states are also subject to the imposition of sanctions under 42 USC, §7661a(d) and (i), FCAA, §502(d) and (i) for failure to submit an operating permits program, the disapproval of any operating permits program, or failure to adequately administer and enforce the approved operating permits program.

The proposed rules will not create any additional burden on private real property beyond what is required under federal law, as the proposed rules, if adopted by the commission and approved by EPA, will become federal law as part of the approved SIP required by 42 U.S.C. §7410, FCAA, §110. The proposed rules will not affect private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. The proposal also will not affect private real property in a manner that restricts or limits an owner's right to the property that would otherwise exist in the absence of the governmental action. Therefore, the proposed rulemaking will not cause a taking under Texas Government Code, Chapter 2007.

Consistency with the Coastal Management Program

The commission reviewed the proposed rulemaking and found the proposal is a rulemaking identified in the Coastal Coordination Act Implementation Rules, 31 TAC §29.11(b)(2) (or §29.11(b)(4), whichever is applicable) relating to rules subject to the Coastal Management Program, and will, therefore, require that goals and policies of the Texas Coastal Management Program (CMP) be considered during the rulemaking process. Note: §29.11(b)(2) applies only to air pollutant emissions, on-site sewage disposal systems, and underground storage tanks. §29.11(b)(4) applies to all other actions.

The commission reviewed this rulemaking for consistency with the CMP goals and policies in accordance with the regulations of the Coastal Coordination Advisory Committee and determined that the rulemaking will not affect any coastal natural resource areas because the rules only affect counties outside the CMP area and is, therefore, consistent with CMP goals and policies.

Written comments on the consistency of this rulemaking may be submitted to the contact person at the address listed under the SUBMITTAL OF COMMENTS section of this preamble.

Effect on Sites Subject to the Federal Operating Permits Program

Chapter 117 is an applicable requirement under 30 TAC Chapter 122, Federal Operating Permits Program. Once adopted, owners or operators of affected sites subject to the federal operating permit program must, consistent with the revision process in Chapter 122, upon the effective date of the rulemaking, revise their operating permit to include the new Chapter 117 requirements.

Announcement of Hearing

The commission will offer a public hearing on this proposal in San Antonio on July 15, 2025, at 7:00 p.m. Central Daylight Time in Suite 101 at 2700 Northeast Loop 410 in San Antonio, Texas 78217. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing. Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

Submittal of Comments

Written comments may be submitted to Gwen Ricco, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted at: *https://tceq.commentinput.com/comment/search*. File size restrictions may apply to comments being submitted via the TCEQ Public Comments system. All comments should reference Rule Project Number 2025-007-117-AI. The comment period closes on July 21, 2025. Please choose one of the methods provided to submit your written comments.

Copies of the proposed rulemaking can be obtained from the commission's website at *https://www.tceq.texas.gov/rules/propose_adopt.html*. For further information, please contact Javier Galván, Air Quality Planning Section, at javier.galvan@tceq.texas.gov.

SUBCHAPTER A. DEFINITIONS

30 TAC §117.10

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code, §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under Texas Healthy and Safety Code (THSC), §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; and THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air.

The proposed amendments implement Texas Water Code, §§5.102, 5.103, 5.105 and 7.002; and Texas Health and Safety Code, §§382.002, 382.011, 382.012, 382.017.

§117.10. Definitions.

Unless specifically defined in the Texas Clean Air Act or Chapter 101 of this title (relating to General Air Quality Rules), the terms in this chapter have the meanings commonly used in the field of air pollution control. Additionally, the following meanings apply, unless the context clearly indicates otherwise. Additional definitions for terms used in this chapter are found in §3.2 and §101.1 of this title (relating to Definitions).

(1) Annual capacity factor--The total annual fuel consumed by a unit divided by the fuel that could be consumed by the unit if operated at its maximum rated capacity for 8,760 hours per year.

(2) Applicable ozone nonattainment area-The following areas, as designated under the 1990 Federal Clean Air Act Amendments.

(A) Beaumont-Port Arthur ozone nonattainment area--An area consisting of Hardin, Jefferson, and Orange Counties.

(B) Bexar County ozone nonattainment area-An area consisting of Bexar County.

(C) Dallas-Fort Worth eight-hour ozone nonattainment area--An area consisting of:

(i) for the purposes of Subchapter D of this chapter (relating to Combustion Control at Minor Sources in Ozone Nonattainment Areas), Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, and Tarrant Counties; or

(ii) for all other divisions of this chapter, Collin, Dallas, Denton, Ellis, Johnson, Kaufman, Parker, Rockwall, Tarrant, and Wise Counties.

(D) Houston-Galveston-Brazoria ozone nonattainment area--An area consisting of Brazoria, Chambers, Fort Bend, Galveston, Harris, Liberty, Montgomery, and Waller Counties.

(3) Auxiliary steam boiler--Any combustion equipment within an electric power generating system, as defined in this section, that is used to produce steam for purposes other than generating electricity. An auxiliary steam boiler produces steam as a replacement for steam produced by another piece of equipment that is not operating due to planned or unplanned maintenance.

(4) Average activity level for fuel oil firing--The product of an electric utility unit's maximum rated capacity for fuel oil firing and the average annual capacity factor for fuel oil firing for the period from January 1, 1990, to December 31, 1993.

(5) Block one-hour average--An hourly average of data, collected starting at the beginning of each clock hour of the day and continuing until the start of the next clock hour.

(6) Boiler--Any combustion equipment fired with solid, liquid, and/or gaseous fuel used to produce steam or to heat water.

(7) Btu--British thermal unit.

(8) Chemical processing gas turbine-A gas turbine that vents its exhaust gases into the operating stream of a chemical process.

(9) Continuous emissions monitoring system (CEMS)--The total equipment necessary for the continuous determination and recordkeeping of process gas concentrations and emission rates in units of the applicable emission limitation.

(10) Daily--A calendar day starting at midnight and continuing until midnight the following day.

(11) Diesel engine--A compression-ignited two- or four-stroke engine that liquid fuel injected into the combustion chamber ignites when the air charge has been compressed to a temperature sufficiently high for auto-ignition.

(12) Duct burner--A unit that combusts fuel and that is placed in the exhaust duct from another unit (such as a stationary gas turbine, stationary internal combustion engine, kiln, etc.) to allow the firing of additional fuel to heat the exhaust gases.

(13) Electric generating facility (EGF)--A unit that generates electric energy for compensation and is owned or operated by a person doing business in this state, including a municipal corporation, electric cooperative, or river authority.

(14) Electric power generating system--One electric power generating system consists of either:

(A) for the purposes of Subchapter C, Divisions 1, 2, and 4 of this chapter (relating to Beaumont-Port Arthur Ozone Nonattainment Area Utility Electric Generation Sources; Bexar County Ozone Nonattainment Area Utility Electric Generation Sources; and Dallas-Fort Worth Eight-Hour Ozone Nonattainment Area Utility Electric Generation Sources), all boilers, auxiliary steam boilers, and stationary gas turbines (including duct burners used in turbine exhaust ducts) at electric generating facility (EGF) accounts that generate electric energy for compensation; are owned or operated by an electric cooperative, municipality, river authority, public utility, independent power producer, or a Public Utility Commission of Texas regulated utility, or any of its successors; and are entirely located in one of the following ozone nonattainment areas:

(i) Beaumont-Port Arthur;

(ii) Bexar County; or

(iii) Dallas-Fort Worth eight-hour;

(B) for the purposes of Subchapter C, Division 3 of this chapter (relating to Houston-Galveston-Brazoria Ozone Nonattainment Area Utility Electric Generation Sources), all boilers, auxiliary steam boilers, and stationary gas turbines (including duct burners used in turbine exhaust ducts) at EGF accounts that generate electric energy for compensation; are owned or operated by an electric cooperative, municipality, river authority, public utility, or a Public Utility Commission of Texas regulated utility, or any of its successors; and are entirely located in the Houston-Galveston-Brazoria ozone nonattainment area;

(C) for the purposes of Subchapter B, Division 3 of this chapter (relating to Houston-Galveston-Brazoria Ozone Nonattainment Area Major Sources), all units in the Houston-Galveston-Brazoria ozone nonattainment area that generate electricity but do not meet the conditions specified in subparagraph (B) of this paragraph, including, but not limited to, cogeneration units and units owned by independent power producers; or

(D) for the purposes of Subchapter E, Division 1 of this chapter (relating to Utility Electric Generation in East and Central Texas), all boilers, auxiliary steam boilers, and stationary gas turbines at EGF accounts that generate electric energy for compensation; are owned or operated by an electric cooperative, independent power producer, municipality, river authority, or public utility, or any of its successors; and are located in Atascosa, Bastrop, Brazos, Calhoun, Cherokee, Fannin, Fayette, Freestone, Goliad, Gregg, Grimes, Harrison, Henderson, Hood, Hunt, Lamar, Limestone, Marion, McLennan, Milam, Morris, Nueces, Parker, Red River, Robertson, Rusk, Titus, Travis, Victoria, or Wharton County, or in Bexar County until December 31, 2024.

(15) Emergency situation--As follows.

(A) An emergency situation is any of the following:

(i) an unforeseen electrical power failure from the serving electric power generating system;

(ii) the period of time that an Electric Reliability Council of Texas, Inc. (ERCOT)-issued emergency notice or energy emergency alert (EEA) (as defined in *ERCOT Nodal Protocols, Section 2: Definitions and Acronyms* (August 13, 2014) and issued as specified in ERCOT *Nodal Protocols, Section 6: Adjustment Period and Real-Time Operations* (August 13, 2014)) is applicable to the serving electric power generating system. The emergency situation is considered to end upon expiration of the emergency notice or EEA issued by ERCOT;

(iii) an unforeseen failure of on-site electrical transmission equipment (e.g., a transformer);

(iv) an unforeseen failure of natural gas service;

(v) an unforeseen flood or fire, or a life-threatening situation;

(vi) operation of emergency generators for Federal Aviation Administration licensed airports, military airports, or manned space flight control centers for the purposes of providing power in anticipation of a power failure due to severe storm activity; or

(vii) operation of an emergency generator as part of ERCOT's emergency response service (as defined in *ERCOT Nodal Protocols, Section 2: Definitions and Acronyms* (August 13, 2014)) if the operation is in direct response to an instruction by ERCOT during the period of an ERCOT EEA as specified in clause (ii) of this subparagraph.

(B) An emergency situation does not include:

(i) operation for training purposes or other foreseeable events; or

(ii) operation for purposes of supplying power for distribution to the electric grid, except as specified in subparagraph (A)(vii) of this paragraph.

(16) Functionally identical replacement--A unit that performs the same function as the existing unit that it replaces, with the condition that the unit replaced must be physically removed or rendered permanently inoperable before the unit replacing it is placed into service.

(17) Heat input--The chemical heat released due to fuel combustion in a unit, using the higher heating value of the fuel. This does not include the sensible heat of the incoming combustion air. In the case of carbon monoxide (CO) boilers, the heat input includes the enthalpy of all regenerator off-gases and the heat of combustion of the incoming CO and of the auxiliary fuel. The enthalpy change of the fluid catalytic cracking unit regenerator off-gases refers to the total heat content of the gas at the temperature it enters the CO boiler, referring to the heat content at 60 degrees Fahrenheit, as being zero.

(18) Heat treat furnace--A furnace that is used in the manufacturing, casting, or forging of metal to heat the metal so as to produce specific physical properties in that metal.

(19) High heat release rate--A ratio of boiler design heat input to firebox volume (as bounded by the front firebox wall where the burner is located, the firebox side waterwall, and extending to the level just below or in front of the first row of convection pass tubes) greater than or equal to 70,000 British thermal units per hour per cubic foot.

(20) Horsepower rating--The engine manufacturer's maximum continuous load rating at the lesser of the engine or driven equipment's maximum published continuous speed.

(21) Incinerator--As follows.

(A) For the purposes of this chapter, the term "incinerator" includes both of the following:

(i) a control device that combusts or oxidizes gases or vapors (e.g., thermal oxidizer, catalytic oxidizer, vapor combustor); and

(ii) an incinerator as defined in §101.1 of this title (relating to Definitions).

(B) The term "incinerator" does not apply to boilers or process heaters as defined in this section, or to flares as defined in §101.1 of this title.

(22) Industrial boiler--Any combustion equipment, not including utility or auxiliary steam boilers as defined in this section, fired with liquid, solid, or gaseous fuel, that is used to produce steam or to heat water.

(23) International Standards Organization (ISO) conditions--ISO standard conditions of 59 degrees Fahrenheit, 1.0 atmosphere, and 60% relative humidity.

(24) Large utility system--All boilers, auxiliary steam boilers, and stationary gas turbines that are located in the Dallas-Fort Worth eight-hour ozone nonattainment area, and were part of one electric

power generating system on January 1, 2000, that had a combined electric generating capacity equal to or greater than 500 megawatts.

(25) Lean-burn engine--A spark-ignited or compression-ignited, Otto cycle, diesel cycle, or two-stroke engine that is not capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5% by volume, as originally designed by the manufacturer.

(26) Low annual capacity factor boiler, process heater, or gas turbine supplemental waste heat recovery unit--An industrial, commercial, or institutional boiler; process heater; or gas turbine supplemental waste heat recovery unit with maximum rated capacity:

(A) greater than or equal to 40 million British thermal units per hour (MMBtu/hr), but less than 100 MMBtu/hr and an annual heat input less than or equal to 2.8 (10^{11}) British thermal units per year (Btu/yr), based on a rolling 12-month average; or

(B) greater than or equal to 100 MMBtu/hr and an annual heat input less than or equal to 2.2 (10^{11}) Btu/yr, based on a rolling 12-month average.

(27) Low annual capacity factor stationary gas turbine or stationary internal combustion engine--A stationary gas turbine or stationary internal combustion engine that is demonstrated to operate less than 850 hours per year, based on a rolling 12-month average.

(28) Low heat release rate--A ratio of boiler design heat input to firebox volume less than 70,000 British thermal units per hour per cubic foot.

(29) Major source--Any stationary source or group of sources located within a contiguous area and under common control that emits or has the potential to emit:

(A) at least 50 tons per year (tpy) of nitrogen oxides (NO_x) and is located in the Beaumont-Port Arthur ozone nonattainment area;

(B) at least 50 [~~100~~] tpy of NO_x and is located in the Bexar County ozone nonattainment area;

(C) at least 25 tpy of NO_x and is located in the Dallas-Fort Worth eight-hour ozone nonattainment area;

(D) at least 25 tpy of NO_x and is located in the Houston-Galveston-Brazoria ozone nonattainment area; or

(E) the amount specified in the major source definition contained in the Prevention of Significant Deterioration of Air Quality regulations promulgated by the United States Environmental Protection Agency in 40 Code of Federal Regulations §52.21 as amended June 3, 1993 (effective June 3, 1994), and is located in Atascosa, Bastrop, Brazos, Calhoun, Cherokee, Comal, Fannin, Fayette, Freestone, Goliad, Gregg, Grimes, Harrison, Hays, Henderson, Hood, Hunt, Lamar, Limestone, Marion, McLennan, Milam, Morris, Nueces, Red River, Robertson, Rusk, Titus, Travis, Victoria, or Wharton County or in Bexar County until December 31, 2024.

(30) Maximum rated capacity--The maximum design heat input, expressed in million British thermal units per hour, unless:

(A) the unit is a boiler, utility boiler, or process heater operated above the maximum design heat input (as averaged over any one-hour period), in which case the maximum operated hourly rate must be used as the maximum rated capacity; or

(B) the unit is limited by operating restriction or permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity; or

(C) the unit is a stationary gas turbine, in which case the manufacturer's rated heat consumption at the International Standards Organization (ISO) conditions must be used as the maximum rated capacity, unless limited by permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity; or

(D) the unit is a stationary, internal combustion engine, in which case the manufacturer's rated heat consumption at Diesel Equipment Manufacturer's Association or ISO conditions must be used as the maximum rated capacity, unless limited by permit condition to a lesser heat input, in which case the limiting condition must be used as the maximum rated capacity.

(31) Megawatt (MW) rating--The continuous MW output rating or mechanical equivalent by a gas turbine manufacturer at International Standards Organization conditions, without consideration to the increase in gas turbine shaft output and/or the decrease in gas turbine fuel consumption by the addition of energy recovered from exhaust heat.

(32) Nitric acid--Nitric acid that is 30% to 100% in strength.

(33) Nitric acid production unit--Any source producing nitric acid by either the pressure or atmospheric pressure process.

(34) Nitrogen oxides (NO_x)--The sum of the nitric oxide and nitrogen dioxide in the flue gas or emission point, collectively expressed as nitrogen dioxide.

(35) Parts per million by volume (ppmv)--All ppmv emission specifications specified in this chapter are referenced on a dry basis. When required to adjust pollutant concentrations to a specified oxygen (O_2) correction basis, the following equation must be used. Figure: 30 TAC §117.10(35) (No change.)

(36) Peaking gas turbine or engine--A stationary gas turbine or engine used intermittently to produce energy on a demand basis.

(37) Plant-wide emission rate--The ratio of the total actual nitrogen oxides mass emissions rate discharged into the atmosphere from affected units at a major source when firing at their maximum rated capacity to the total maximum rated capacities for those units.

(38) Plant-wide emission specification--The ratio of the total allowable nitrogen oxides mass emissions rate dischargeable into the atmosphere from affected units at a major source when firing at their maximum rated capacity to the total maximum rated capacities for those units.

(39) Predictive emissions monitoring system (PEMS)--The total equipment necessary for the continuous determination and recordkeeping of process gas concentrations and emission rates using process or control device operating parameter measurements and a conversion equation or computer program to produce results in units of the applicable emission limitation.

(40) Process heater--Any combustion equipment fired with liquid and/or gaseous fuel that is used to transfer heat from combustion gases to a process fluid, superheated steam, or water for the purpose of heating the process fluid or causing a chemical reaction. The term "process heater" does not apply to any unfired waste heat recovery heater that is used to recover sensible heat from the exhaust of any combustion equipment, or to boilers as defined in this section.

(41) Pyrolysis reactor--A unit that produces hydrocarbon products from the endothermic cracking of feedstocks such as ethane,

propane, butane, and naphtha using combustion to provide indirect heating for the cracking process.

(42) Reheat furnace--A furnace that is used in the manufacturing, casting, or forging of metal to raise the temperature of that metal in the course of processing to a temperature suitable for hot working or shaping.

(43) Rich-burn engine--A spark-ignited, Otto cycle, four-stroke, naturally aspirated or turbocharged engine that is capable of being operated with an exhaust stream oxygen concentration equal to or less than 0.5% by volume, as originally designed by the manufacturer.

(44) Small utility system--All boilers, auxiliary steam boilers, and stationary gas turbines that are located in the Dallas-Fort Worth eight-hour ozone nonattainment area, and were part of one electric power generating system on January 1, 2000, that had a combined electric generating capacity less than 500 megawatts.

(45) Stationary gas turbine--Any gas turbine system that is gas and/or liquid fuel fired with or without power augmentation. This unit is either attached to a foundation or is portable equipment operated at a specific minor or major source for more than 90 days in any 12-month period. Two or more gas turbines powering one shaft must be treated as one unit.

(46) Stationary internal combustion engine--A reciprocating engine that remains or will remain at a location (a single site at a building, structure, facility, or installation) for more than 12 consecutive months. Included in this definition is any engine that, by itself or in or on a piece of equipment, is portable, meaning designed to be and capable of being carried or moved from one location to another. Indicia of portability include, but are not limited to, wheels, skids, carrying handles, dolly, trailer, or platform. Any engine (or engines) that replaces an engine at a location and that is intended to perform the same or similar function as the engine being replaced is included in calculating the consecutive residence time period. An engine is considered stationary if it is removed from one location for a period and then returned to the same location in an attempt to circumvent the consecutive residence time requirement. Nonroad engines, as defined in 40 Code of Federal Regulations §89.2, are not considered stationary for the purposes of this chapter.

(47) System-wide emission rate--The ratio of the total actual nitrogen oxides mass emissions rate discharged into the atmosphere from affected units in an electric power generating system or portion thereof located within a single ozone nonattainment area when firing at their maximum rated capacity to the total maximum rated capacities for those units. For fuel oil firing, average activity levels must be used in lieu of maximum rated capacities for the purpose of calculating the system-wide emission rate.

(48) System-wide emission specification--The ratio of the total allowable nitrogen oxides mass emissions rate dischargeable into the atmosphere from affected units in an electric power generating system or portion thereof located within a single ozone nonattainment area when firing at their maximum rated capacity to the total maximum rated capacities for those units. For fuel oil firing, average activity levels must be used in lieu of maximum rated capacities for the purpose of calculating the system-wide emission specification.

(49) Thirty-day rolling average--An average, calculated for each day that fuel is combusted in a unit, of all the hourly emissions data for the preceding 30 days that fuel was combusted in the unit.

(50) Twenty-four hour rolling average--An average, calculated for each hour that fuel is combusted (or acid is produced, for a nitric or adipic acid production unit), of all the hourly emissions data for the preceding 24 hours that fuel was combusted in the unit.

(51) Unit--A unit consists of either:

(A) for the purposes of §§117.105, 117.305, 117.405, 117.1005, and 117.1205 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) and each requirement of this chapter associated with §§117.105, 117.305, 117.405, 117.1005, and 117.1205 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section;

(B) for the purposes of §§117.110, 117.310, 117.1010, and 117.1210 of this title (relating to Emission Specifications for Attainment Demonstration) and each requirement of this chapter associated with §§117.110, 117.310, 117.1010, and 117.1210 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section, or any other stationary source of nitrogen oxides (NO_x) at a major source, as defined in this section;

(C) for the purposes of §117.2010 of this title (relating to Emission Specifications) and each requirement of this chapter associated with §117.2010 of this title, any boiler, process heater, stationary gas turbine (including any duct burner in the turbine exhaust duct), or stationary internal combustion engine, as defined in this section;

(D) for the purposes of §117.2110 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter associated with §117.2110 of this title, any stationary internal combustion engine, as defined in this section;

(E) for the purposes of §117.3310 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter associated with §117.3310 of this title, any stationary internal combustion engine, as defined in this section;

(F) for the purposes of §117.410 and §117.1310 of this title (relating to Emission Specifications for Eight-Hour Attainment Demonstration) and each requirement of this chapter associated with §117.410 and §117.1310 of this title, any boiler, process heater, stationary gas turbine, or stationary internal combustion engine, as defined in this section, or any other stationary source of NO_x at a major source, as defined in this section;

(G) for the purposes of §117.205 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) and each requirement of this chapter associated with §117.205 of this title, any process heater, stationary gas turbine (including any duct burner used in the turbine exhaust duct), or [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engine, as defined in this section, or any other stationary source of NO_x at a major source, as defined in this section; or

(H) for the purposes of §117.1105 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) and each requirement of this chapter associated with §117.1105 of this title, any utility boiler, auxiliary steam boiler, or stationary gas turbine (including any duct burner used in turbine exhaust ducts), as defined in this section.

(52) Utility boiler--Any combustion equipment owned or operated by an electric cooperative, municipality, river authority, public utility, or Public Utility Commission of Texas regulated utility, fired with solid, liquid, and/or gaseous fuel, used to produce steam for the purpose of generating electricity. Stationary gas turbines, including any associated duct burners and unfired waste heat boilers, are not considered to be utility boilers.

(53) Wood--Wood, wood residue, bark, or any derivative fuel or residue thereof in any form, including, but not limited to, sawdust, sander dust, wood chips, scraps, slabs, millings, shavings, and processed pellets made from wood or other forest residues.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Texas Commission on Environmental Quality
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SUBCHAPTER B. COMBUSTION CONTROL AT MAJOR INDUSTRIAL, COMMERCIAL, AND INSTITUTIONAL SOURCES IN OZONE NONATTAINMENT AREAS

DIVISION 2. BEXAR COUNTY OZONE NONATTAINMENT AREA MAJOR SOURCES

30 TAC §§117.200, 117.203, 117.205, 117.230, 117.235, 117.240, 117.245

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§117.200. Applicability.

This division applies to the following units located at any major stationary source of nitrogen oxides located in the Bexar County ozone nonattainment area:

(1) stationary gas turbines;

(2) duct burners used in turbine exhaust ducts; [~~and~~]

(3) [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engines; [~~.~~]

(4) industrial, commercial, or institutional process heaters;

(5) natural gas-fired ovens;

(6) flares; and

(7) incinerators.

§117.203. Exemptions.

The following units are exempt from the provisions of this division, except as specified in §§117.205(e), 117.240(f), 117.245(f)(4) and (7) [~~(9)~~], and 117.252 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT); Continuous Demonstration of Compliance; Notification, Recordkeeping, and Reporting Requirements; and Control Plan Procedures for Reasonably Available Control Technology [~~(RACT)~~]):

(1) stationary gas turbines and [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engines that are used as follows:

(A) in research and testing of the unit;

(B) for purposes of performance verification and testing of the unit;

(C) solely to power other gas turbines or engines during startups;

(D) exclusively in emergency situations, except that operation for testing or maintenance purposes of the gas turbine or engine is allowed for up to 100 hours per year, based on a rolling 12-month basis. Any new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after March 1, 2026, is ineligible for this exemption. For purposes of this subparagraph, the terms "modification" and "reconstruction" have the meanings defined in §116.10 of this title (relating to General Definitions) and 40 Code of Federal Regulations (CFR) §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in §101.1 of this title (relating to Definitions), a used engine from anywhere outside that account; or

(E) in response to and during the existence of any officially declared disaster or state of emergency;

(2) any stationary diesel engine placed into service before March 1, 2026, that:

(A) operates less than 100 hours per year, based on a rolling 12-month basis; and

(B) has not been modified, reconstructed, or relocated on or after March 1, 2026. For the purposes of this subparagraph, the terms "modification" and "reconstruction" have the meanings defined in §116.10 of this title and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in §101.1 of this title, a used engine from anywhere outside that account;

(3) any new, modified, reconstructed, or relocated stationary diesel engine placed into service on or after March 1, 2026, that:

(A) operates less than 100 hours per year, based on a rolling 12-month basis, in other than emergency situations; and

(B) meets the corresponding emission standard for nonroad engines listed in 40 CFR §1039.101, Table 1 (effective July 29, 2021), and in effect at the time of installation, modification, reconstruction, or relocation. For the purposes of this paragraph, the terms "modification" and "reconstruction" have the meanings defined in §116.10 of this title and 40 CFR §60.15 (December 16, 1975), respectively, and the term "relocated" means to newly install at an account, as defined in §101.1 of this title, a used engine from anywhere outside that account;

(4) [~~(2)~~] gas-fired lean-burn stationary [~~reciprocating~~] internal combustion engines with a horsepower (hp) rating less than 50 hp;

(5) [~~(3)~~] stationary gas turbines with a maximum rated capacity less than 10.0 million British thermal units per hour (MMBtu/hr); [~~and~~]

(6) industrial, commercial, or institutional process heaters with a maximum rated capacity equal to or less than 5.0 MMBtu/hr;

(7) natural gas-fired ovens with a maximum rated capacity equal to or less than 5.0 MMBtu/hr;

(8) flares;

(9) incinerators with a maximum rated capacity less than 40 MMBtu/hr; and

(10) [~~(4)~~] units located at a major source that is subject to Subchapter C, Division 2 of this chapter (related to Bexar County Ozone Nonattainment Area Utility Electric Generation Sources).

§117.205. Emission Specifications for Reasonably Available Control Technology (RACT).

(a) Emission specifications. No person shall allow the discharge into the atmosphere nitrogen oxides (NO_x) [~~(NOx)~~] emissions in excess of the following emission specifications, in accordance with the applicable schedule in §117.9010 of this title (relating to Compliance Schedule for Bexar County Ozone Nonattainment Area Major Sources), except as provided in subsection (c) of this section:

(1) stationary gas turbines, 0.55 pounds [~~pound~~] per million British thermal units [~~unit~~] (lb/MMBtu);

(2) duct burners used in turbine exhaust ducts, 0.55 lb/MMBtu; [~~and~~]

(3) [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engines: [~~, 0.5 gram per horsepower-hour.~~]

(A) gas-fired lean-burn engines:

(i) fired on landfill gas, 0.60 grams per horsepower-hour (g/hp-hr); and

(ii) all others, 0.50 g/hp-hr; and

(B) diesel engines:

(i) with a horsepower (hp) rating of less than 25 hp that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 5.0 g/hp-hr;

(ii) with a hp rating of 25 hp or greater, but less than 75 hp, that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 3.3 g/hp-hr;

(iii) with a hp rating of 75 hp or greater, but less than 175 hp, that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 0.30 g/hp-hr;

(iv) with a hp rating of 175 hp or greater, but less than or equal to 750 hp, that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 0.30 g/hp-hr;

(v) with a hp rating greater than 750 hp, that are electric generator sets, and that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 0.50 g/hp-hr; and

(vi) with a hp rating greater than 750 hp, for all others that are not electric generator sets, and that are installed, modified, reconstructed, or relocated on or after March 1, 2026, 2.6 g/hp-hr;

(4) process heaters:

(A) with a maximum rated capacity equal to or greater than 40 million British thermal units per hour (MMBtu/hr), 0.025 lb/MMBtu; and

(B) with a maximum rated capacity less than 40 MMBtu/hr, 0.036 lb/MMBtu (or alternatively, 30 parts per million by volume (ppmv) NO_x, at 3.0% oxygen (O_2), dry basis);

(5) natural gas-fired ovens, 0.036 lb/MMBtu; and

(6) incinerators, 0.030 lb/MMBtu.

(b) NO_x averaging time. The emission specifications in subsection (a) of this section apply [~~on~~]:

[~~(1) a block one-hour average, in the units of the applicable standard; or~~]

(1) [~~(2)~~] If [~~if~~] the unit is operated with a NO_x continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) under §117.240 of this title (relating to Continuous Demonstration of Compliance), either as: [~~a rolling 30-day average, in the units of the applicable standard.~~]

(A) a 30-day rolling average, in the units of the applicable standard;

(B) a block one-hour average, in the units of the applicable standard, or alternatively;

(C) a block one-hour average, in pounds per hour, for process heaters, calculated as the product of the process heater's maximum rated capacity and its applicable emission specification in lb/MMBtu.

(2) If the unit is not operated with a NO_x CEMS or PEMS under §117.240 of this title, as a block one-hour average, in the units of the applicable standard. Alternatively for process heaters, the emission specification may be applied in pounds per hour, as specified in paragraph (1)(C) of this subsection.

(c) Compliance flexibility. An owner or operator may use §117.9800 of this title (relating to Use of Emission Credits for Compliance) to comply with the NO_x emission specifications of this section.

(d) Prohibition of circumvention.

(1) The maximum rated capacity used to determine the applicability of the emission specifications in this section and the initial compliance demonstration, monitoring, testing requirements, and control plan requirements in §§117.235, 117.240, and 117.252 of this title (relating to Initial Demonstration of Compliance; Continuous Demonstration of Compliance; and Control Plan Procedures for Reasonably Available Control Technology) must be the greater of the following:

(A) the maximum rated capacity as of December 31, 2019;

(B) the maximum rated capacity after December 31, 2019; or

(C) the maximum rated capacity authorized by a permit issued under Chapter 116 of this title (relating to Control of Air Pollution by Permits for New Construction or Modification) after December 31, 2019.

(2) A unit's classification is determined by the most specific classification applicable to the unit as of December 31, 2019. For example, a unit that is classified as a gas-fired lean-burn stationary reciprocating internal combustion engine as of December 31, 2019, but subsequently is authorized to operate as a dual-fuel engine, is classified as a gas-fired lean-burn stationary reciprocating internal combustion engine for the purposes of this chapter.

(3) After December 31, 2019, changes to a unit subject to an emission specification in this section that would result in increased NO_x emissions from a unit not subject to an emission specification in this section, are only allowed if:

(A) the increase in NO_x emissions at the unit not subject to this section is determined:

(i) using a CEMS or PEMS that meets the requirements in §117.240 of this title, or

(ii) through stack testing that meets the requirements in §117.235 of this title; and

(B) emission credits equal to the increase in NO_x emissions at the unit not subject to this section are obtained and used in accordance with §117.9800 of this title.

(4) [~~(3)~~] A source that met the definition of major source on December 31, 2019, is always classified as a major source for purposes of this chapter. A source that did not meet the definition of major source (i.e., was a minor source, or did not yet exist) on December 31, 2019, but becomes a major source at any time after December 31, 2019, is from that time forward always classified as a major source for purposes of this chapter.

(e) Operating restrictions. No person may start or operate any stationary diesel engine for testing or maintenance of the engine between the hours of 6:00 a.m. and noon, except:

(1) to comply with specific manufacturer's recommended testing requiring a run of over 18 consecutive hours;

(2) to verify reliability of emergency equipment (e.g., emergency generators or pumps) immediately after unforeseen repairs. Routine maintenance is not considered to be an unforeseen repair; or

(3) for firewater pumps used for emergency response training conducted from April 1 through October 31.

§117.230. Operating Requirements.

(a) The owner or operator shall operate any unit subject to the emission specifications in §117.205 of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) in compliance with those limitations.

(b) All units subject to the emission specifications in §117.205 of this title [~~(relating to Emission Specifications for Reasonably Available Control Technology (RACT))~~] must be operated to minimize nitrogen oxides (NO_x) emissions, consistent with the emission control techniques selected, over the unit's operating or load range during normal operations. Such operational requirements include the following.

(1) Each process heater controlled with forced draft flue gas recirculation (FGR) to reduce NO_x emissions must be operated such that the proportional design rate of FGR is maintained, consistent with combustion stability, over the operating range.

(2) Each process heater controlled with induced draft FGR to reduce NO_x emissions must be operated such that the operation of FGR over the operating range is not restricted by artificial means.

(3) Each unit controlled with steam or water injection must be operated such that injection rates are maintained to limit NO_x concentrations to less than or equal to the NO_x concentrations achieved at maximum rated capacity (corrected to 15% oxygen on a dry basis for stationary gas turbines).

(4) [~~(1)~~] Each unit controlled with post-combustion control techniques must be operated such that the reducing agent injection rate is maintained to limit NO_x concentrations to less than or equal to the NO_x concentrations achieved at maximum rated capacity.

(5) [~~(2)~~] Each [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engine must be checked for proper operation of the engine according to §117.8140(b) of this title (relating to Emission Monitoring for Engines).

§117.235. Initial Demonstration of Compliance.

(a) The owner or operator of any unit subject to the emission specifications in §117.205(a) of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) shall test each [~~the~~] unit for nitrogen oxides (NO_x) and oxygen [~~(O_2)~~] emissions while firing gaseous fuel or, as applicable, liquid and solid fuel.

(b) Initial demonstration of compliance testing must be performed in accordance with the schedule specified in §117.9010 of this title (relating to Compliance Schedule for Bexar County Ozone Nonattainment Area Major Sources).

(c) The initial demonstration of compliance tests required by subsection (a) of this section must use the methods referenced in subsection (e) or (f) of this section and must be used for determination of initial compliance with the emission specifications of this division (relating to Bexar County Ozone Nonattainment Area Major Sources). Test results must be reported in the units of the applicable emission specifications and averaging periods.

(d) Any continuous emissions monitoring system (CEMS) or any predictive emissions monitoring system (PEMS) required by §117.240 of this title (relating to Continuous Demonstration of Compliance) must be installed and operational before conducting testing under subsection (a) of this section. Verification of operational status must, at a minimum, include completion of the initial monitor certification and the manufacturer's written requirements or recommendations for installation, operation, and calibration of the device or system.

(e) For units operating without a CEMS or PEMS, initial compliance with the emission specifications of this division must be demonstrated according to the requirements in [~~of~~] §117.8000 of this title (relating to Stack Testing Requirements).

(f) For units operating with a CEMS or PEMS in accordance with §117.240 of this title, after monitor certification testing of the CEMS or PEMS in accordance with subsection (d) of this section, initial compliance with the emission specifications of this division must be demonstrated [~~after monitor certification testing~~] using the CEMS or PEMS as follows. [~~For units complying with a NO_x emission specification on a block one-hour average, every one-hour period while operating at the maximum rated capacity (or as near thereto as practicable) is used to determine compliance with the NO_x emission specification.~~]

(1) For units demonstrating compliance using a NO_x emission specification in pounds per million British thermal units (lb/MMBtu) on a 30-day rolling average, NO_x emissions from the unit are monitored for 30 successive unit operating days, and the 30-day

average emission rate is used to determine compliance with the NO_x emission specification. The 30-day average emission rate is calculated as the total NO_x emissions (in pounds) from the unit for the 30-day test period divided by the total heat input (in MMBtu) for the unit during the same 30-day test period.

(2) For units demonstrating compliance using a NO_x emission specification on a block one-hour average, any one-hour period while operating at the maximum rated capacity, or as near thereto as practicable, is used to determine compliance with the NO_x emission specification.

(g) Compliance stack test reports must include the information required in §117.8010 of this title (relating to Compliance Stack Test Reports).

§117.240. Continuous Demonstration of Compliance.

(a) Totalizing fuel flow meters.

(1) The owner or operator of units subject to this division (relating to Bexar County Ozone Nonattainment Area Major Sources) shall install, calibrate, maintain, and operate a totalizing fuel flow meter, with an accuracy of ± 5%, to individually and continuously measure the gas and liquid fuel usage. A computer that collects, sums, and stores electronic data from continuous fuel flow meters is an acceptable totalizer. The owner or operator must continuously operate the totalizing fuel flow meter at least 95% of the time when the unit is operating during a calendar year. For the purpose of compliance with this subsection for units having pilot fuel supplied by a separate fuel system or from an unmonitored portion of the same fuel system, the fuel flow to pilots may be calculated using the manufacturer's design flow rates rather than measured with a fuel flow meter. The calculated pilot fuel flow rate must be added to the monitored fuel flow when fuel flow is totaled.

(2) The following are alternatives to the fuel flow monitoring requirements of paragraph (1) of this subsection.

(A) Units operating with a nitrogen oxides (NO_x) and diluent continuous emissions monitoring system (CEMS) under subsection (c) of this section may monitor stack exhaust flow using the flow monitoring specifications of 40 Code of Federal Regulations (CFR) Part 60, Appendix B, Performance Specification 6 or 40 CFR Part 75, Appendix A.

(B) Units that vent to a common stack with a NO_x and diluent CEMS under subsection (c) of this section may use a single totalizing fuel flow meter.

(C) Stationary [~~Gas-fired lean-burn stationary reciprocating~~] internal combustion engines and stationary gas turbines equipped with a continuous monitoring system that continuously monitors horsepower and hours of operation are not required to install totalizing fuel flow meters. The continuous monitoring system must be installed, calibrated, maintained, and operated according to manufacturers' recommended procedures.

(b) NO_x monitors.

(1) The owner or operator of the following units shall install, calibrate, maintain, and operate a CEMS or predictive emissions monitoring system (PEMS) to monitor exhaust NO_x [~~NOx~~]:

(A) units with a rated heat input greater than or equal to 100 million British thermal units (MMBtu) per hour;

(B) stationary gas turbines with a megawatt (MW) rating greater than or equal to 30 MW and operated more than 850 hours per year;

(C) units that use a chemical reagent for reduction of NO_x; and

(D) units that the owner or operator elects to comply with the NO_x emission specifications in [~~of~~] §117.205(a) of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) using a pound per MMBtu limit on a 30-day rolling average.

(2) The owner or operator of the following units is not required to install a CEMS or PEMS under this subsection: [~~Units subject to the NO_x CEMS requirements of 40 CFR Part 75 are not required to install CEMS or PEMS under this subsection.~~]

(A) units subject to the NO_x CEMS requirements of 40 CFR Part 75; and

(B) stationary diesel engines equipped with selective catalytic reduction (SCR) systems that meet all of the following criteria.

(i) The SCR system must use a reductant other than the engine's fuel.

(ii) The SCR system must operate with a diagnostic system that monitors reductant quality and tank levels.

(iii) The diagnostic system must alert owners or operators to the need to refill the reductant tank before it is empty or to replace the reductant if the reductant does not meet applicable concentration specifications.

(iv) If the SCR system uses input from an exhaust NO_x sensor (or other sensor) to alert owners or operators when the reductant quality is inadequate, the reductant quality does not need to be monitored separately by the diagnostic system.

(v) The reductant tank level must be monitored in accordance with the manufacturer's design to demonstrate compliance with this subparagraph.

(vi) The method of alerting an owner or operator must be a visual or audible alarm.

(3) The owner or operator shall use one of the following methods to provide substitute emissions compliance data during periods when the NO_x monitor is off-line:

(A) if the NO_x monitor is a CEMS:

(i) subject to 40 CFR Part 75, use the missing data procedures specified in 40 CFR Part 75, Subpart D (Missing Data Substitution Procedures); or

(ii) subject to 40 CFR Part 75, Appendix E, use the missing data procedures specified in 40 CFR Part 75, Appendix E, §2.5 (Missing Data Procedures);

(B) if the NO_x monitor is a PEMS:

(i) use the methods specified in 40 CFR Part 75, Subpart D; or

(ii) use calculations in accordance with §117.8110(b) of this title (relating to Emission Monitoring System Requirements for Utility Electric Generation Sources);

(C) monitor operating parameters for each unit in accordance with 40 CFR Part 75, Appendix E, §1.1 or §1.2 and calculate NO_x emission rates based on those procedures; or

(D) use the maximum block one-hour emission rate as measured during the initial demonstration of compliance required in

§117.235(e) of this title (relating to Initial Demonstration of Compliance).

(c) CEMS requirements. The owner or operator of any CEMS used to meet a pollutant monitoring requirement of this section shall comply with the requirements in [~~of~~] §117.8100(a) of this title (relating to Emission Monitoring System Requirements for Industrial, Commercial, and Institutional Sources).

(d) PEMS requirements. The owner or operator of any PEMS used to meet a pollutant monitoring requirement of this section shall comply with the following.

(1) The PEMS must predict the pollutant emissions in the units of the applicable emission limitations of this division.

(2) The PEMS must meet the requirements in [~~of~~] §117.8100(b) of this title.

(e) Engine monitoring. The owner or operator of any [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engine subject to the emission specifications of this division that is not equipped with a NO_x CEMS or PEMS shall stack test engine NO_x emissions as specified in §117.8140(a) of this title (relating to Emission Monitoring for Engines).

(f) Run time meters. The owner or operator of any stationary gas turbine or [~~gas-fired lean-burn~~] stationary [~~reciprocating~~] internal combustion engine claimed exempt using the exemption in [~~of~~] §117.203(1)(D), (2), or (3) of this title (relating to Exemptions) shall record the operating time with a non-resettable elapsed run time meter.

(g) Data used for compliance. After the initial demonstration of compliance required by §117.235 of this title, the methods required in this section must be used to determine compliance with the emission specifications of §117.205(a) of this title. For enforcement purposes, the executive director may also use other commission compliance methods to determine whether the unit is in compliance with applicable emission specifications.

(h) Testing requirements.

(1) The owner or operator of units that are subject to the emission specifications in [~~of~~] §117.205(a) of this title shall test the units as specified in §117.235 of this title in accordance with the applicable schedule specified in §117.9010 of this title (relating to Compliance Schedule for Bexar County [~~Eight-Hour~~] Ozone Nonattainment Area Major Sources).

(2) The owner or operator of any unit [~~not equipped with CEMS or PEMS that are~~] subject to the emission specifications in [~~of~~] §117.205(a) of this title that is not equipped with a NO_x CEMS or PEMS shall retest the unit as specified in §117.235 of this title within 60 days after any modification that could reasonably be expected to increase the NO_x emission rate.

§117.245. Notification, Recordkeeping, and Reporting Requirements.

(a) Startup and shutdown records. For units subject to the startup and/or shutdown provisions in [~~of~~] §101.222 of this title (relating to Demonstrations), hourly records must be made of startup and/or shutdown events and maintained for a period of at least two years. Records must be available for inspection by the executive director, the United States Environmental Protection Agency, and any local air pollution control agency having jurisdiction upon request. These records must include but are not limited to: type of fuel burned; quantity of each type of fuel burned; and the date, time, and duration of the procedure.

(b) Notification. The owner or operator of a unit subject to the emission specifications in [~~of~~] §117.205(a) of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) shall submit [~~written~~] notification to the appropriate regional office and any local air pollution control agency having jurisdiction as follows: [~~of any continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) relative accuracy test audit (RATA) conducted under §117.240 of this title (relating to Continuous Demonstration of Compliance) or any testing conducted under §117.235 of this title (relating to Initial Demonstration of Compliance) at least 15 days in advance of the date of the RATA or testing to the appropriate regional office and any local air pollution control agency having jurisdiction.~~]

(1) written notification of the date of any testing conducted under §117.235 of this title (relating to Initial Demonstration of Compliance) at least 15 days prior to such date; and

(2) written notification of the date of any continuous emissions monitoring system (CEMS) or predictive emissions monitoring system (PEMS) relative accuracy test audit (RATA) conducted under §117.240 of this title (relating to Continuous Demonstration of Compliance) at least 15 days prior to such date.

(c) Reporting of test results. The owner or operator of a unit subject to the emission specifications in [~~of~~] §117.205(a) of this title shall furnish the Office of Compliance and Enforcement, the appropriate regional office, and any local air pollution control agency having jurisdiction a copy of the results of any testing conducted under §117.235 of this title and any CEMS or PEMS RATA conducted under §117.240 of this title:

(1) within 60 days after completion of such testing or evaluation; and

(2) not later than the compliance schedule specified in §117.9010 of this title (relating to Compliance Schedule for Bexar County [~~Eight-Hour~~] Ozone Nonattainment Area Major Sources).

(d) Semiannual reports. The owner or operator of a unit required to install a CEMS or PEMS under §117.240 of this title shall report in writing to the executive director on a semiannual basis any exceedance of the applicable emission specifications of this division (relating to Bexar County Ozone Nonattainment Area Major Sources) and the monitoring system performance. All reports must be postmarked or received by the 30th day following the end of each calendar semiannual period (i.e., July 30 and January 30). Written reports must include the following information:

(1) the magnitude of excess emissions computed in accordance with 40 Code of Federal Regulations §60.13(h), any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the unit operating time during the reporting period;

(2) specific identification of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the affected unit, the nature and cause of any malfunction (if known), and the corrective action taken, or preventative measures adopted;

(3) the date and time identifying each period when the continuous monitoring system was inoperative, except for zero and span checks and the nature of the system repairs or adjustments;

(4) when no excess emissions have occurred or the continuous monitoring system has not been inoperative, repaired, or adjusted, such information must be stated in the report; and

(5) if the total duration of excess emissions for the reporting period is less than 1.0% of the total unit operating time for the re-

porting period and the CEMS or PEMS downtime for the reporting period is less than 5.0% of the total unit operating time for the reporting period, only a summary report form (as outlined in the latest edition of the commission's Guidance for Preparation of Summary, Excess Emission, and Continuous Monitoring System Reports) must be submitted, unless otherwise requested by the executive director. If the total duration of excess emissions for the reporting period is greater than or equal to 1.0% of the total unit operating time for the reporting period or the CEMS or PEMS downtime for the reporting period is greater than or equal to 5.0% of the total unit operating time for the reporting period, a summary report and an excess emission report must both be submitted.

(e) Reporting for engines. The owner or operator of any stationary internal combustion [~~gas-fired~~] engine subject to the emission specifications in §117.205(a) of this title shall report in writing to the executive director on a semiannual basis any excess emissions and the air-fuel ratio monitoring system performance. All reports must be postmarked or received by the 30th day following the end of each calendar semiannual period (i.e., July 30 and January 30). Written reports must include the following information:

(1) the magnitude of excess emissions (based on the quarterly emission checks in [~~of~~] §117.230(b)(5) [~~§117.230(a)(2)~~] of this title (relating to Operating Requirements) and the biennial emission testing required for demonstration of emissions compliance in accordance with §117.240(e) of this title), computed in pounds per hour and grams per horsepower-hour, any conversion factors used, the date and time of commencement and completion of each time period of excess emissions, and the engine operating time during the reporting period; and

(2) specific identification, to the extent feasible, of each period of excess emissions that occurs during startups, shutdowns, and malfunctions of the engine or emission control system, the nature and cause of any malfunction (if known), and the corrective action taken, or preventative measures adopted.

(f) Recordkeeping. The owner or operator of a unit subject to the requirements of this division shall maintain written or electronic records of the data specified in this subsection. Such records must be kept for a period of at least five years and must be made available upon request by authorized representatives of the executive director, the United States Environmental Protection Agency, or local air pollution control agencies having jurisdiction. The records must include:

(1) for each unit subject to §117.240(a) of this title, records of annual fuel usage;

(2) for each unit using a CEMS or PEMS in accordance with §117.240 of this title, monitoring records of:

(A) hourly emissions and fuel usage (or stack exhaust flow) for units complying with an emission specification enforced on a block one-hour average; or

(B) daily emissions and fuel usage (or stack exhaust flow) for units complying with an emission specification enforced on a [~~daily or~~] rolling 30-day average. Emissions must be recorded in units of:

(i) pounds per million British thermal units (lb/MMBtu) heat input; and

(ii) pounds or tons per day;

(3) for each stationary internal combustion engine subject to the emission specifications of this division, records of:

(A) emissions measurements required by:

(i) §117.230(b)(5) [~~§117.230(2)~~] of this title; and

(ii) §117.240(e) of this title;

(B) catalytic converter, air-fuel ratio controller, or other emissions-related control system maintenance, including the date and nature of corrective actions taken; and

(C) daily average horsepower and total daily hours of operation for each engine that the owner or operator elects to use the alternative monitoring system allowed under §117.240(a)(2)(C) of this title;

(4) for units claimed exempt from emission specifications using the exemption in [~~of~~] §117.203(1)(D), (2), or (3) of this title (relating to Exemptions), records of monthly hours of operation, for exemptions based on hours per year of operation. In addition, for each turbine or engine claimed exempt under §117.203(1)(D) or (E) of this title, written records must be maintained of the purpose of turbine or engine operation and, if operation was for an emergency situation, as defined in §117.10(15) of this title (relating to Definitions), identification of the type of emergency situation and the start and end times and date(s) of the emergency situation;

(5) records of the results of initial certification testing, evaluations, calibrations, checks, adjustments, and maintenance of CEMS or PEMS; [~~and~~]

(6) records of the results of performance testing, including initial demonstration of compliance testing conducted in accordance with §117.235 of this title; and [~~.~~]

(7) for each stationary diesel engine subject to the operating restrictions of §117.205(e) of this title, records of each time the engine is operated for testing and maintenance of the engine, including:

(A) date(s) of operation;

(B) start and end times of operation;

(C) identification of the engine; and

(D) total hours of operation for each month and for the most recent 12 consecutive months.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine K. Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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For further information, please call: (512) 239-0682

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SUBCHAPTER H. ADMINISTRATIVE PROVISIONS
DIVISION 1. COMPLIANCE SCHEDULES

30 TAC §117.9010

Statutory Authority

The amendments are proposed under Texas Water Code (TWC), §5.102, concerning general powers; §5.103, concerning Rules; TWC, §5.105, concerning General Policy, which authorize the commission to adopt rules necessary to carry out its powers

and duties under the TWC; TWC, §7.002, concerning Enforcement Authority, which authorizes the commission to enforce the provisions of the Water Code and the Health and Safety Code within the commission's jurisdiction; and under Texas Health and Safety Code (THSC), §382.017, concerning Rules, which authorizes the commission to adopt rules consistent with the policy and purpose of the Texas Clean Air Act.

The amendments are also proposed under THSC, §382.002, concerning Policy and Purpose, which establishes the commission's purpose to safeguard the state's air resources, consistent with the protection of public health, general welfare, and physical property; THSC, §382.011, concerning General Powers and Duties, which authorizes the commission to control the quality of the state's air; THSC, §382.012, concerning the State Air Control Plan, which authorizes the commission to prepare and develop a general, comprehensive plan for the proper control of the state's air; THSC, §382.016, concerning Monitoring Requirements; Examination of Records, which authorizes the commission to prescribe reasonable requirements for measuring and monitoring the emissions of air contaminants; and THSC, §382.021, concerning Sampling Methods and Procedures.

The proposed amendments implement TWC, §§5.102, 5.103, and 7.002; and THSC, §§382.002, 382.011, 382.012, 382.016, 382.017, and 382.021.

§117.9010. Compliance Schedule for Bexar County Ozone Nonattainment Area Major Sources.

(a) The owner or operator of any stationary source of nitrogen oxides (NO_x) in the Bexar County ozone nonattainment area that is a major source of NO_x and is subject to §117.205(a) of this title (relating to Emission Specifications for Reasonably Available Control Technology (RACT)) shall comply with the requirements of Subchapter B, Division 2 of this chapter (relating to Bexar County Ozone Nonattainment Area Major Sources) as follows: [~~shall comply with the requirements of Subchapter B, Division 2 of this chapter as soon as practicable, but no later than January 1, 2025.~~]

(1) for units subject to the emission specifications in §117.205(a) of this title that emit or have the potential to emit equal to or greater than 100 tons per year (tpy) of NO_x:

(A) submission of the control plan required by §117.252 of this title (relating to Control Plan Procedures for Reasonably Available Control Technology) was required by January 1, 2025;

(B) for units subject to the emission specifications in §117.205(a) of this title as of January 1, 2025, compliance with all other requirements of Subchapter B, Division 2 of this chapter was required by January 1, 2025, and these units must continue to comply with the requirements of Subchapter B, Division 2 of this chapter; and

(C) for units that became subject to the emission specifications in §117.205(a) of this title after January 1, 2025, compliance is required as specified in subsection (b) of this section.

(2) for units subject to the emission specifications in §117.205(a) of this title that emit or have the potential to emit equal to or greater than 50 tpy but less than 100 tpy of NO_x:

(A) submission of the control plan required by §117.252 of this title is required no later than February 1, 2026; and

(B) compliance with all other requirements of Subchapter B, Division 2 of this chapter is required as soon as practicable but no later than March 1, 2026.

(b) The owner or operator of any stationary source of NO_x that becomes subject to the requirements of Subchapter B, Division 2 of this chapter on or after the applicable compliance date specified in subsection (a) of this section[~~,~~] shall comply with the requirements of Subchapter B, Division 2 of this chapter as soon as practicable, but no later than 60 days after becoming subject.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Charmaine K. Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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TITLE 34. PUBLIC FINANCE

PART 1. COMPTROLLER OF PUBLIC ACCOUNTS

CHAPTER 1. CENTRAL ADMINISTRATION

SUBCHAPTER C. ADMINISTRATION

34 TAC §1.201

The Comptroller of Public Accounts proposes new §1.201, concerning tuition reimbursement program, to establish a process for authorizing and obtaining tuition reimbursement for comptroller employees.

New §1.201 provides that comptroller designated funds may be used to reimburse employees for job-related training and education expenses, and the comptroller may award time off for job related training and education.

Subsection (a) outlines the establishment and purpose and states that programs for the training and education of administrators and employees, including tuition reimbursement, materially aid effective state administration, and public money spent on those programs serves an important public purpose.

Subsection (b) provides the definitions of the term "training" and "tuition reimbursement."

Subsection (c) outlines employee eligibility for tuition reimbursement and/or approved time off during regular working hours.

Subsection (d) outlines the terms by which an employee would be ineligible to receive tuition reimbursement and/or approved time off during regular working hours.

Subsection (e) provides that the comptroller may establish limits to approved time off for course work.

Subsection (f) outlines the terms that may affect reimbursement and/or time off denials, caps on amounts reimbursed, allowable expenses, provides that an employee does not have a right to tuition reimbursement and/or time off, and provides that comptroller decisions regarding denials are final and not appealable. Subsection (f) also provides that before an employee of the agency may be reimbursed for tuition expenditures, the deputy comptroller must approve the tuition reimbursement payment.

Tetyana Melnyk, Director of Revenue Estimating Division, has determined that the proposed new rule will create a new program and will, as a result, increase the number of individuals subject to the rule's applicability. During the first five years that the proposed new rule is in effect, the rule: will not require the creation or elimination of employee positions; will not require an increase or decrease in future legislative appropriations to the agency; will not require an increase or decrease in fees paid to the agency; and will not positively or adversely affect this state's economy.

Ms. Melnyk also has determined that the proposed new rule would have no significant fiscal impact on the state government, units of local government, or individuals. The proposed new rule would benefit the public by fulfilling a statutory requirement, establishing a program whereby the agency could enhance its capacity to perform its duties, and protect state funding. There would be no significant economic cost to the public. The proposed new rule would have no significant fiscal impact on small businesses or rural communities.

You may submit comments on the proposal to Katie McLaughlin, Manager, Human Resources, at human.resources@cpa.texas.gov or at P.O. Box 13528, Austin, Texas 78711-3528. The comptroller must receive your comments no later than 30 days from the date of publication of the proposal in the *Texas Register.*

The rule is proposed under Government Code, §656.048, which requires state agencies to adopt rules regarding training and education.

The rule implements Government Code, §656.048.

§1.201. Tuition Reimbursement Program.

(a) Establishment and Purpose. The comptroller finds that programs for the training and education of administrators and employees, including tuition reimbursement, materially aid effective state administration, and public money spent on those programs serves an important public purpose. Comptroller designated funds may be used to reimburse employees for job-related training and education expenses, and the comptroller may award time off for job-related training and education. Such expenditures or privileges are at the discretion of the comptroller and should only be made to address current or anticipated needs of the comptroller.

(b) Definitions. The following words and terms, when used in this section, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Training--Instruction, or other education received by a comptroller employee that is not normally received by other comptroller employees, and that is designed to enhance the ability of the employee to perform their job. Training includes a course of study at an institution of higher education or a private or independent institution of higher education and may also include nontraditional training, such as online courses or courses not credited towards a degree.

(2) Tuition Reimbursement--The reimbursement of a monetary amount preapproved by the comptroller, to a current comptroller employee, after the employee has paid for and successfully completed comptroller preapproved coursework and/or training that addresses current or anticipated needs of the comptroller.

(c) Employee Eligibility. To be eligible for tuition reimbursement and/or approved time off during regular work hours, the following requirements must be met:

(1) employee must be employed on a full-time basis;

(2) employee must have been employed with the comptroller for at least six months;

(3) employee must have continued employment for the duration of the course;

(4) participation by the employee must be approved by their supervisor and the employee's supervisor must verify that the employee's participation will not disrupt the operations of the agency;

(5) the supervisor must verify that the comptroller has sufficient funds to cover the expected costs to be reimbursed and that the training is aligned with the comptroller's needs;

(6) the employee should complete any necessary agreements for tuition assistance and any forms for requesting training, and receive approval from agency management prior to the employee beginning the course work;

(7) the employee must agree to remain in the employment of the comptroller for a period as further specified by comptroller policy;

(8) the employee must agree to repay the comptroller for all expenses for which the employee was reimbursed, if the employee terminates employment before the end of the period specified by comptroller policy; and

(9) the employee must complete the course work for which tuition reimbursement is requested and achieve satisfactory performance in the course work as further specified in comptroller policy. Requirements to establish satisfactory completion of course work will be specified in the comptroller tuition reimbursement policy or procedures developed by the agency.

(d) Employee Ineligibility. An employee is not eligible for consideration if any of the following applies:

(1) the employee is on probation;

(2) the employee is the subject of a Human Resources investigation;

(3) the employee has received agency discipline within the last 12 months; or

(4) the employee's job performance has been rated unsatisfactory in any of the Core Competency categories of the latest employee performance evaluation.

(5) Notwithstanding employee discipline or performance status, the comptroller may grant an exception and allow an employee to apply for tuition reimbursement when the employee is requested by the agency to take course work, or the agency has determined that the disciplinary, investigatory, or performance-related issues have been addressed to the satisfaction of the agency. The employee must maintain satisfactory performance through the duration of the course or training program.

(e) Course Work During Established Work Hours. The comptroller may establish limits on the amount of time allowed for qualified employees to participate in actual coursework or classes during the employee's normal work hours.

(f) Reimbursement; Denial of Request.

(1) Tuition reimbursement is always subject to funding availability.

(2) The comptroller may establish policies and procedures for requesting reimbursement. At any time, the comptroller may set a cap on the amount of tuition reimbursement. Any cap amounts will be

specified in the comptroller tuition reimbursement policy or procedures developed by the agency.

(3) Before an employee of the agency may be reimbursed for tuition expenditures, the deputy comptroller must approve the tuition reimbursement payment.

(4) Allowable expenses for the training of employees include tuition and educational fees specified in policy or procedures established by the comptroller. The comptroller may specify expenses that are not reimbursable, including without limitation, late fees, installment fees, supplies, travel or commuting expenses, and expenses for classes or courses taken prior to employment with the comptroller's office.

(5) The tuition reimbursement program does not include training required either by state or federal law or that is determined necessary by the comptroller and offered to all employees of the comptroller performing similar jobs.

(6) An employee does not have a right to reimbursement and/or approved time off for course work, even if the employee meets the qualifications of the tuition reimbursement program.

(7) Any decision of the agency to deny a request to attend training or reimburse tuition is final and cannot be appealed.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

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Don Neal
General Counsel
Comptroller of Public Accounts
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 475-2220

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TITLE 37. PUBLIC SAFETY AND CORRECTIONS

PART 7. TEXAS COMMISSION ON LAW ENFORCEMENT

CHAPTER 211. ADMINISTRATION

37 TAC §211.1

The Texas Commission on Law Enforcement (Commission) proposes amended 37 Texas Administrative Code §211.1, Definitions. The proposed amended rule would add definitions for a full-time peace officer, part-time peace officer, and reserve law enforcement officer. The definitions were developed from Texas Government Code Chapter 614, Texas Occupations Code §1701.001, and the statutes cited in the proposed reserve law enforcement officer definition. These definitions would provide guidance for determining the appropriate type of appointment for a peace officer.

Mr. John P. Beauchamp, General Counsel, has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no foreseeable fiscal implications to state or local governments as a result of enforcing or administering the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be a positive benefit to the public by clarifying the meaning for the types of peace officer appointments. There will be no anticipated economic costs to persons required to comply with the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no adverse economic effects to small businesses, microbusinesses, or rural communities as a result of implementing the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no effects to a local economy as a result of implementing the proposed amendment.

Mr. Beauchamp has determined the following:

(1) the proposed rule does not create or eliminate a government program;

(2) implementation of the proposed rule does not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule does not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule does not require an increase or decrease in fees paid to the agency;

(5) the proposed rule does not create a new regulation;

(6) the proposed rule does not expand, limit, or repeal an existing regulation;

(7) the proposed rule does not increase or decrease the number of individuals subject to the rule's applicability; and

(8) the proposed rule does not positively or adversely affect this state's economy.

The Commission will accept comments regarding the proposed amended rule. The comment period will last 30 days following the publication of this proposal in the *Texas Register*. Comments may be submitted electronically to or in writing to Mr. John P. Beauchamp, General Counsel, Texas Commission on Law Enforcement, 6330 E. Highway 290, Suite 200, Austin, Texas 78723-1035.

The amended rule is proposed pursuant to Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701.

The amended rule as proposed affects or implements Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority. No other code, article, or statute is affected by this proposal.

The proposed amended rule has been reviewed by legal counsel and has been found to be within the Commission's authority to adopt.

§211.1. Definitions.

(a) The following words and terms, when used in this part, shall have the following meanings, unless the context clearly indicates otherwise.

(1) Academic alternative program--A program for college credit offered by a training provider recognized by the Southern Association of Colleges and Schools or its successors and the Texas Higher Education Coordinating Board, authorized by the commission to conduct preparatory law enforcement training as part of a degree plan program, and consisting of commission-approved curricula.

(2) Academic provider--A school, accredited by the Southern Association of Colleges and Schools or its successors and the Texas Higher Education Coordinating Board, which has been approved by the commission to provide basic licensing courses.

(3) Accredited college or university--An institution of higher education that is accredited or authorized by the Southern Association of Colleges and Schools, the Middle States Association of Colleges and Schools, the New England Association of Schools and Colleges, the North Central Association of Colleges and Schools, the Northwest Commission on Colleges and Universities, the Western Association of Schools and Colleges or its successors, or an international college or university evaluated and accepted by a United States accredited college or university.

(4) Active--A license issued by the commission that meets the current requirements of licensure and training as determined by the commission.

(5) Administrative Law Judge (ALJ)--An administrative law judge appointed by the chief administrative law judge of the State Office of Administrative Hearings.

(6) Agency--A law enforcement unit or other entity, whether public or private, authorized by Texas law to appoint a person licensed or certified by the commission.

(7) Appointed--Elected or commissioned by an agency as a peace officer, reserve or otherwise selected or assigned to a position governed by the Texas Occupations Code, Chapter 1701, without regard to pay or employment status.

(8) Background investigation--An investigation completed by the enrolling or appointing entity into an applicant's personal history as set forth in §217.1(b)(10).

(9) Basic licensing course--Any current commission developed course that is required before an individual may be licensed by the commission.

(10) Certified copy--A true and correct copy of a document or record certified by the custodian of records of the submitting entity.

(11) Chief administrator--The head or designee of a law enforcement agency.

(12) Commission--The Texas Commission on Law Enforcement.

(13) Commissioned--Has been given the legal power to act as a peace officer or reserve, whether elected, employed, or appointed.

(14) Commissioners--The nine commission members appointed by the governor.

(15) Contract jail--A correctional facility, operated by a county, municipality or private vendor, operating under a contract with a county or municipality, to house inmates convicted of offenses committed against the laws of another state of the United States, as provided by Texas Government Code, §511.0092.

(16) Contract Jailer--A person licensed as a Jailer in a Contract Jail or employed by an agency outside of a County Jail whose employing agency provides services inside of a County Jail which would require the person to have a Jailer License.

(17) Contractual training provider--A law enforcement agency or academy, a law enforcement association, alternative delivery trainer, distance education, academic alternative, or proprietary training provider that conducts specific education and training under a contract with the commission.

(18) Convicted--Has been adjudged guilty of or has had a judgment of guilt entered in a criminal case that has not been set aside on appeal, regardless of whether:

(A) the sentence is subsequently probated and the person is discharged from probation;

(B) the charging instrument is dismissed and the person is released from all penalties and disabilities resulting from the offense; or

(C) the person is pardoned, unless the pardon is expressly granted for subsequent proof of innocence.

(19) Community supervision--Any court-ordered community supervision or probation resulting from a deferred adjudication or conviction by a court of competent jurisdiction. However, this does not include supervision resulting from a pretrial diversion.

(20) Diploma mill--An entity that offers for a fee with little or no coursework, degrees, diplomas, or certificates that may be used to represent to the general public that the individual has successfully completed a program of secondary education or training.

(21) Distance education--Study, at a distance, with an educational provider that conducts organized, formal learning opportunities for students. The instruction is offered wholly or primarily by distance study, through virtually any media. It may include the use of: videotapes, DVD, audio recordings, telephone and email communications, and Web-based delivery systems.

(22) Duty ammunition--Ammunition required or permitted by the agency to be carried on duty.

(23) Executive director--The executive director of the commission or any individual authorized to act on behalf of the executive director.

(24) Experience--Includes each month, or part thereof, served as a peace officer, reserve, jailer, telecommunicator, or federal officer. Credit may, at the discretion of the executive director, be awarded for relevant experience from an out-of-state agency.

(25) Family Violence--In this chapter, has the meaning assigned by Chapter 71, Texas Family Code.

(26) Field training program--A program intended to facilitate a transition from the academic setting to the performance of the general duties of the appointing agency.

(27) Firearms--Any handgun, shotgun, precision rifle, patrol rifle, or fully automatic weapon that is carried by the individual officer in an official capacity. Conducted energy devices (CEDs) are not firearms.

(28) Firearms proficiency--Successful completion of the annual firearms proficiency requirements.

(29) Fit for duty review--A formal specialized examination of an individual, appointed to a position governed by the Texas Occupations Code, Chapter 1701, without regard to pay or employment status, to determine if the appointee is able to safely and/or effectively perform essential job functions. The basis for these examinations should be based on objective evidence and a reasonable basis that the cause may be attributable to a medical and/or psychological condition or impairment. Objective evidence may include direct observation, credible

third party reports; or other reliable evidence. The review should come after other options have been deemed inappropriate in light of the facts of the case. The selected Texas licensed medical doctor or psychologist, who is familiar with the duties of the appointee, conducting an examination should be consulted to ensure that a review is indicated. This review may include psychological and/or medical fitness examinations.

(30) Full-time peace officer--a peace officer who:

(A) works as a peace officer on average at least 32 hours per week, exclusive of paid vacation; and

(B) is compensated at least at the federal minimum wage and is entitled to all employee benefits offered to a peace officer by the appointing law enforcement agency or its governing body.

(31) [~~(30)~~] High School Diploma--An earned high school diploma from a United States high school, an accredited secondary school equivalent to that of United States high school, or a passing score on the general education development test indicating a high school graduation level. Documentation from diploma mills is not acceptable.

(32) [~~(31)~~] Home School Diploma--An earned diploma from a student who predominately receives instruction in a general elementary or secondary education program that is provided by the parent, or a person in parental authority, in or through the child's home. (Texas Education Code §29.916)

(33) [~~(32)~~] Honorably Retired Peace Officer--An unappointed person with a Texas Peace Officer license who has a cumulative total of 15 years of full-time service as a Peace Officer. An Honorably Retired Peace Officer does not carry any Peace Officer authority.

(34) [~~(33)~~] Individual--A human being who has been born and is or was alive.

(35) [~~(34)~~] Jailer--A person employed or appointed as a jailer under the provisions of the Local Government Code, §85.005, or Texas Government Code §511.0092.

(36) [~~(35)~~] Killed in the line of duty--A death that is the directly attributed result of a personal injury sustained in the line of duty.

(37) [~~(36)~~] Law--Including, but not limited to, the constitution or a statute of this state, or the United States; a written opinion of a court of record; a municipal ordinance; an order of a county commissioners' court; or a rule authorized by and lawfully adopted under a statute.

(38) [~~(37)~~] Law enforcement academy--A school operated by a governmental entity which may provide basic licensing courses and continuing education under contract with the commission.

(39) [~~(38)~~] Law enforcement automobile for training--A vehicle equipped to meet the requirements of an authorized emergency vehicle as identified by Texas Transportation Code §546.003 and §547.702.

(40) [~~(39)~~] Less lethal force weapon--A weapon designed or intended for use on individuals or groups of individuals which, in the course of expected or reasonably foreseen use, has a lower risk of causing death or serious injury than do firearms. Less lethal force weapons do not include firearms or other weapons whose expected or reasonably foreseen use would result in life-threatening injuries. Less lethal force weapons may include police batons, hand-held chemical irritants, chemical irritants dispersed at a distance, conducted electrical weapons, kinetic impact projectiles, water cannons, and acoustic weapons and equipment. An officer provided or equipped with a less lethal force weapon should be trained, qualified, or certified in its use.

(41) [~~(40)~~] Lesson plan--A plan of action consisting of a sequence of logically linked topics that together make positive learning experiences. Elements of a lesson plan include: measurable goals and objectives, content, a description of instructional methods, tests and activities, assessments and evaluations, and technologies utilized.

(42) [~~(41)~~] License--A license required by law or a state agency rule that must be obtained by an individual to engage in a particular business.

(43) [~~(42)~~] Licensee--An individual holding a license issued by the commission.

(44) [~~(43)~~] Line of duty--Any lawful and reasonable action, which an officer identified in Texas Government Code, Chapter 3105 is required or authorized by rule, condition of employment, or law to perform. The term includes an action by the individual at a social, ceremonial, athletic, or other function to which the individual is assigned by the individual's employer.

(45) [~~(44)~~] Moral character--The propensity on the part of a person to serve the public of the state in a fair, honest, and open manner.

(46) [~~(45)~~] Officer--A peace officer or reserve identified under the provisions of the Texas Occupations Code, §1701.001.

(47) Part-time peace officer--a peace officer who:

(A) works as a peace officer on a regular basis but on average less than 32 hours per week, exclusive of paid vacation; and

(B) is compensated at least at the federal minimum wage and is entitled to all employee benefits offered to a peace officer by the appointing law enforcement agency or its governing body.

(48) [~~(46)~~] Patrol rifle--Any magazine-fed repeating rifle with iron/open sights or with a frame mounted optical enhancing sighting device, 5 power or less, that is carried by the individual officer in an official capacity.

(49) [~~(47)~~] Patrol vehicle--A vehicle equipped with emergency lights, siren, and the means to safely detain and transport a combative detainee.

(50) [~~(48)~~] Peace officer--A person elected, employed, or appointed as a peace officer under the provisions of the Texas Occupations Code, §1701.001.

(51) [~~(49)~~] Personal Identification Number (PID)--A unique computer-generated number assigned to individuals for identification in the commission's electronic database.

(52) [~~(50)~~] Placed on probation--Has received an adjudicated or deferred adjudication probation for a criminal offense.

(53) [~~(51)~~] POST--State or federal agency with jurisdiction similar to that of the commission, such as a peace officer standards and training agency.

(54) [~~(52)~~] Precision rifle--Any rifle with a frame mounted optical sighting device greater than 5 power that is carried by the individual officer in an official capacity.

(55) [~~(53)~~] Proprietary training contractor--An approved training contractor who has a proprietary interest in the intellectual property delivered.

(56) [~~(54)~~] Public security officer--A person employed or appointed as an armed security officer identified under the provisions of the Texas Occupations Code, §1701.001.

(57) [~~(55)~~] Reactivate--To make a license issued by the commission active after a license becomes inactive. A license becomes inactive at the end of the most recent unit or cycle in which the licensee is not appointed and has failed to complete legislatively required training.

(58) [~~(56)~~] Reinstate--To make a license issued by the commission active after disciplinary action or failure to obtain required continuing education.

[~~(57) Reserve--A person appointed as a reserve law enforcement officer under the provisions of the Texas Occupations Code, §1701.001.~~]

(59) Reserve law enforcement officer--a licensed peace officer appointed according to Section 37.0816, Education Code, Section 41.102 or 411.0208, Government Code, Section 85.004, 86.012, or 341.012, Local Government Code, or Section 60.0775, Water Code.

(60) [~~(58)~~] School marshal--A person employed and appointed by the board of trustees of a school district, the governing body of an open-enrollment charter school, the governing body of a private school, or the governing board of a public junior college under Texas Code of Criminal Procedure, Article 2.127 and in accordance with and having the rights provided by Texas Education Code, §37.0811.

(61) [~~(59)~~] Self-assessment--Completion of the commission created process, which gathers information about a training or education program.

(62) [~~(60)~~] Separation--An explanation of the circumstances under which the person resigned, retired, or was terminated, reported on the form currently prescribed by the commission, in accordance with Texas Occupations Code, §1701.452.

(63) [~~(61)~~] SOAH--The State Office of Administrative Hearings.

(64) [~~(62)~~] Successful completion--A minimum of:

(A) 70 percent or better; or

(B) C or better; or

(C) pass, if offered as pass/fail.

(65) [~~(63)~~] Sustainable funding sources--Funding from an agency's governing body such as property tax, sales tax, use and franchise fees, and the issuance of traffic citations subject to section 542.402 of the Texas Transportation Code. Term limited sources, such as grants, are not sustainable funding sources.

(66) [~~(64)~~] TCLEDDS--Texas Commission on Law Enforcement Data Distribution System.

(67) [~~(65)~~] Telecommunicator--A person employed as a telecommunicator under the provisions of the Texas Occupations Code, §1701.001.

(68) [~~(66)~~] Training coordinator--An individual, appointed by a commission-recognized training provider, who meets the requirements of §215.9 of this title.

(69) [~~(67)~~] Training cycle--A 48-month period as established by the commission. Each training cycle is composed of two contiguous 24-month units.

(70) [~~(68)~~] Training hours--Classroom or distance education hours reported in one-hour increments.

(71) [~~(69)~~] Training program--An organized collection of various resources recognized by the commission for providing preparatory or continuing training. This program includes, but is not limited to, learning goals and objectives, academic activities and exercises, lesson plans, exams, skills training, skill assessments, instructional and learning tools, and training requirements.

(72) [~~(70)~~] Training provider--A governmental body, law enforcement association, alternative delivery trainer, or proprietary entity credentialed by or authorized under a training provider contract with the commission to provide preparatory or continuing training for licensees or potential licensees.

(73) [~~(71)~~] Uniform--Dress that makes an officer immediately identifiable as a peace officer, to include a visible badge. Acceptable uniform dress must be defined in agency policy and consistent in its application and use across the agency.

(74) [~~(72)~~] Verification (verified)--The confirmation of the correctness, truth, or authenticity of a document, report, or information by sworn affidavit, oath, or deposition.

(b) The effective date of this section is November 1, 2025 [~~June 1, 2024~~].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502508
Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 936-7700

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37 TAC §211.29

The Texas Commission on Law Enforcement (Commission) proposes amended 37 Texas Administrative Code §211.29, Responsibilities of Agency Chief Administrators. The proposed amended rule would codify in rule the requirements of law enforcement agencies in relation to the Commission contained in Texas Occupations Code Chapter 1701 or in the Misconduct Allegations and Personnel Files model policies. This will allow the Commission to enforce limited aspects of these model policies adopted by law enforcement agencies, including the investigation of and submission of reports for allegations of misconduct and the maintenance and submission of personnel and department files.

Mr. John P. Beauchamp, General Counsel, has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no foreseeable fiscal implications to state or local governments as a result of enforcing or administering the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be a positive benefit to the public by conforming with the Misconduct Allegations and Personnel Files model policies. There will be no anticipated economic costs to persons required to comply with the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no adverse economic effects to small businesses, microbusinesses, or rural communities as a result of implementing the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no effects to a local economy as a result of implementing the proposed amendment.

Mr. Beauchamp has determined the following:

(1) the proposed rule does not create or eliminate a government program;

(2) implementation of the proposed rule does not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule does not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule does not require an increase or decrease in fees paid to the agency;

(5) the proposed rule does create a new regulation by allowing Commission enforcement, as reflected by statute, of policies required of law enforcement agencies;

(6) the proposed rule does not expand, limit, or repeal an existing regulation;

(7) the proposed rule does not increase or decrease the number of individuals subject to the rule's applicability; and

(8) the proposed rule does not positively or adversely affect this state's economy.

The Commission will accept comments regarding the proposed amended rule. The comment period will last 30 days following the publication of this proposal in the *Texas Register*. Comments may be submitted electronically to or in writing to Mr. John P. Beauchamp, General Counsel, Texas Commission on Law Enforcement, 6330 E. Highway 290, Suite 200, Austin, Texas 78723-1035.

The amended rule is proposed pursuant to Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, Texas Occupations Code §1701.4522, Misconduct Investigation and Hiring Procedures, and Texas Occupations Code §1701.4535, Personnel File. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701. Texas Occupations Code §1701.4522 requires the Commission to adopt a model policy for misconduct investigations. Texas Occupations Code §1701.4535 requires the Commission to adopt a model policy for personnel files.

The amended rule as proposed affects or implements Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, Texas Occupations Code §1701.4522, Misconduct Investigation and Hiring Procedures, and Texas Occupations Code §1701.4535, Personnel File. No other code, article, or statute is affected by this proposal.

The proposed amended rule has been reviewed by legal counsel and has been found to be within the Commission's authority to adopt.

§211.29. Responsibilities of Agency Chief Administrators.

(a) An agency chief administrator is responsible for making any and all reports and submitting any and all documents required of that agency by the commission.

(b) An individual who is appointed or elected to the position of the chief administrator of a law enforcement agency shall notify the Commission of the date of appointment and title, through a form prescribed by the Commission within 30 days of such appointment.

(c) An agency chief administrator must comply with the appointment and retention requirements under Texas Occupations Code, Chapter 1701.

(d) An agency chief administrator must report to the commission within 30 days, any change in the agency's name, physical location, mailing address, electronic mail address, or telephone number.

(e) An agency chief administrator must report, in a standard format, incident-based data compiled in accordance with Texas Occupations Code §1701.164.

(f) Line of duty deaths shall be reported to the commission in current peace officers' memorial reporting formats.

(g) An agency chief administrator has an obligation to determine that all appointees are able to safely and effectively perform the essential job functions. An agency chief administrator may require a fit for duty review upon identifying factors that indicate an appointee may no longer be able to perform job-related functions safely and effectively. These factors should be based on objective evidence and a reasonable basis that the cause may be attributable to a medical or psychological condition or impairment.

(h) An agency chief administrator shall notify the commission of any failed medical (L-2) or psychological (L-3) examination within 30 days on a form prescribed by the commission. An agency chief administrator shall notify the commission upon a final determination of a failed fit-for-duty examination (FFDE) or drug screen within 30 days on a form prescribed by the commission.

(i) An agency must provide training on employment issues identified in Texas Occupations Code §1701.402 and field training.

(j) An agency must provide continuing education training required in Texas Occupations Code §1701.351 and §1701.352.

(k) Before an agency appoints any licensee to a position requiring a commission license it shall complete the reporting requirements of Texas Occupations Code §1701.451.

(l) An agency appointing a person who does not hold a commission license must file an application for the appropriate license with the commission.

(m) An agency must notify the commission electronically following the requirements of Texas Occupations Code §1701.452, when a person under appointment with that agency resigns or is terminated.

(n) An agency chief administrator must comply with orders from the commission regarding the correction of a report of resignation/termination or request a hearing from SOAH.

(o) An agency chief administrator must:

(1) at the time the agency becomes aware of an allegation of misconduct, as defined in the model policy required by Texas Occupations Code § 1701.4522(a)(1), that may result in suspension, demotion, or termination, initiate an appropriate administrative or criminal investigation into alleged misconduct of a licensee who was appointed by the law enforcement agency at the time the alleged misconduct occurred;

(2) ensure completion of the investigation into alleged misconduct in a timely manner consistent with the law enforcement agency's policies even if the licensee has separated from the law enforcement agency;

(3) submit a report of a completed investigation into alleged criminal misconduct for which criminal charges are filed against a licensee to the commission within 30 days after the investigation is completed on a form prescribed by the commission;

(4) submit a report of a completed investigation into alleged administrative misconduct to the commission in a timely manner, but not later than 30 days after the licensee's separation from the law enforcement agency, on a form prescribed by the commission;

(5) if the investigative findings or disciplinary action taken are appealed, notify the commission that the matter is under appeal and notify the commission of the disposition of an appeal within 30 days after receipt of the decision; and

(6) include documentation of the completed investigation in the licensee's personnel or department file, as appropriate.

(p) An agency chief administrator must:

(1) maintain a personnel file and department file for each licensee appointed with the law enforcement agency;

(2) submit to the commission a complete copy of the personnel file of a licensee within 30 days after separation of the licensee from the law enforcement agency in a manner prescribed by the commission; and

(3) submit to the commission a complete copy of the personnel file and department file of a licensee upon request as part of an ongoing investigation relating to the licensee.

(q) [~~(o)~~] Except in the case of a commission error, an agency that wishes to report a change to any information within commission files about a licensee shall do so in a request to the commission, containing:

(1) the licensees name, date of birth, last four digits of the social security number, or PID;

(2) the requested change; and

(3) the reason for the change.

(r) [~~(p)~~] An agency chief administrator may not appoint an applicant subject to pending administrative action based on:

(1) enrollment or licensure ineligibility; or

(2) statutory suspension or revocation.

(s) [~~(q)~~] The effective date of this section is November 1, 2025 [~~May 1, 2025~~].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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Gregory Stevens
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CHAPTER 215. TRAINING AND EDUCATIONAL PROVIDERS

37 TAC §215.8

The Texas Commission on Law Enforcement (Commission) proposes new 37 Texas Administrative Code §215.8, Minimum Standards for Appointment as a Training Coordinator over a Basic Licensing Course. The proposed new rule would establish minimum standards and training requirements for individuals to be appointed as a training coordinator over a basic licensing course. This new rule was developed by the Minimum Standards for Training Coordinators Advisory Committee. These minimum standards were developed from the minimum standards required for Commission licensees as contained in 37 Texas Administrative Code §217.1. This new rule would require training coordinators over a basic licensing course to take a basic training coordinator course once and continuing education on a biennial basis.

Mr. John P. Beauchamp, General Counsel, has determined that for each year of the first five years this proposed new rule will be in effect, there will be no foreseeable fiscal implications to state or local governments as a result of enforcing or administering the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed new rule will be in effect, there will be a positive benefit to the public by ensuring that basic licensing courses are conducted by qualified training coordinators. There will be no anticipated economic costs to persons required to comply with the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed new rule will be in effect, there will be no adverse economic effects to small businesses, microbusinesses, or rural communities as a result of implementing the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed new rule will be in effect, there will be no effects to a local economy as a result of implementing the proposed amendment.

Mr. Beauchamp has determined the following:

(1) the proposed rule does not create or eliminate a government program;

(2) implementation of the proposed rule does not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule does not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule does not require an increase or decrease in fees paid to the agency;

(5) the proposed rule does create a new regulation by requiring training coordinators over a basic licensing course to meet minimum standards and training requirements;

(6) the proposed rule does not expand, limit, or repeal an existing regulation;

(7) the proposed rule does not increase or decrease the number of individuals subject to the rule's applicability; and

(8) the proposed rule does not positively or adversely affect this state's economy.

The Commission will accept comments regarding the proposed new rule. The comment period will last 30 days following the publication of this proposal in the *Texas Register*. Comments

may be submitted electronically to or in writing to Mr. John P. Beauchamp, General Counsel, Texas Commission on Law Enforcement, 6330 E. Highway 290, Suite 200, Austin, Texas 78723-1035.

The new rule is proposed pursuant to Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701 and to establish minimum standards relating to the competence and reliability, including the education, training, physical, and mental standards, for licensing as an officer, county jailer, or telecommunicator.

The new rule as proposed affects or implements Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority.

The proposed new rule has been reviewed by legal counsel and has been found to be within the Commission's authority to adopt.

§215.8. Minimum Standards for Appointment as a Training Coordinator over a Basic Licensing Course.

(a) A licensee currently appointed by a law enforcement agency that provides or reports a basic licensing course may be appointed by that same agency as a training coordinator if the licensee:

(1) holds a peace officer license or the respective license for the course to be taught;

(2) holds a valid instructor proficiency certificate or license; and

(3) has completed the basic training coordinator course:

(A) for an initial appointment as a training coordinator, within six months after appointment; or

(B) for any subsequent appointment, prior to being appointed.

(b) Any individual to which subsection (a) of this section does not apply must meet the following minimum standards to be appointed as a training coordinator for a training provider that provides or reports any basic licensing course:

(1) minimum age requirement:

(A) 21 years of age for providers who provide a peace officer basic licensing course, or 18 years of age if the individual has received:

(i) an associate's degree or 60 semester hours of credit from an accredited college or university; or

(ii) an honorable discharge from the armed forces of the United States after at least two years of active service; or

(B) 18 years of age for providers who provide jailer or telecommunicator basic licensing courses;

(2) minimum educational requirements:

(A) holds a valid instructor proficiency certificate or license;

(B) has completed the basic training coordinator course:

(i) for an initial appointment as a training coordinator, within six months after appointment; or

(ii) for any subsequent appointment, prior to being appointed; and

(C) satisfies one of the following requirements:

(i) has passed a general educational development (GED) test indicating high school graduation level;

(ii) holds a high school diploma; or

(iii) has an honorable discharge from the armed forces of the United States after at least 24 months of active duty service;

(3) is fingerprinted and is subjected to a search of local, state and U.S. national records and fingerprint files to disclose any criminal record;

(4) has never been on court-ordered community supervision or probation for any criminal offense above the grade of Class B misdemeanor or a Class B misdemeanor within the last ten years from the date of the court order;

(5) is not currently charged with any criminal offense for which conviction would be a bar to licensure;

(6) has never been convicted of an offense above the grade of a Class B misdemeanor or a Class B misdemeanor within the last ten years;

(7) has never been convicted or placed on community supervision in any court of an offense involving family violence;

(8) for providers who provide a peace officer basic licensing course, is not prohibited by state or federal law from operating a motor vehicle;

(9) is not prohibited by state or federal law from possessing firearms or ammunition;

(10) has been subjected to a background investigation completed by the training provider into the individual's personal history. A background investigation shall include, at a minimum, the following:

(A) the training provider shall:

(i) require completion of the commission-approved personal history statement; and

(ii) meet all requirements enacted in Texas Occupations Code §1701.451, including submission to the commission of a form confirming all requirements have been met. An in-person review of personnel records is acceptable in lieu of making the personnel records available electronically if a hiring training provider and a previous employing training provider or law enforcement agency mutually agree to the in-person review;

(11) examined by a physician, selected by the training provider, who is licensed by the Texas Medical Board. The physician must be familiar with the duties of a training coordinator. The individual must be declared by that professional, on a form prescribed by the commission, within 180 days before the date of appointment by the training provider to be:

(A) physically sound and free from any defect which may adversely affect the performance of duties of the training coordinator; and

(B) show no trace of drug dependency or illegal drug use after a blood test or other medical test;

(12) examined by a psychologist, selected by the training provider, who is licensed by the Texas State Board of Examiners of Psychologists. This examination may also be conducted by a psychiatrist licensed by the Texas Medical Board. The psychologist or psychiatrist must be familiar with the duties appropriate to a training coordi-

nator. The individual must be declared by that professional, on a form prescribed by the commission, to be in satisfactory psychological and emotional health to serve as a training coordinator. The examination must be conducted pursuant to professionally recognized standards and methods. The examination process must consist of a review of a job description for a training coordinator; review of any personal history statements; review of any background documents; at least two instruments, one which measures personality traits and one which measures psychopathology; and a face-to-face interview conducted after the instruments have been scored. The individual must be declared by that professional, on a form prescribed by the commission, within 180 days before the date of the appointment by the training provider;

(13) has never received a dishonorable discharge from the armed forces of the United States;

(14) has not had a commission or out-of-state equivalent license denied by final order or revoked;

(15) is not currently on suspension, or does not have a surrender of a commission or out-of-state equivalent license currently in effect; and

(16) is a U.S. citizen or is a legal permanent resident of the United States, if the individual is an honorably discharged veteran of the armed forces of the United States with at least two years of service before discharge and presents evidence satisfactory to the commission that the individual has applied for United States citizenship.

(c) For the purposes of this section, the commission will construe any court-ordered community supervision, probation or conviction for a criminal offense to be its closest equivalent under the Texas Penal Code classification of offenses if the offense arose from:

(1) another penal provision of Texas law; or

(2) a penal provision of any other state, federal, military or foreign jurisdiction.

(d) A classification of an offense as a felony at the time of conviction will never be changed because Texas law has changed or because the offense would not be a felony under current Texas laws.

(e) An individual who fails to meet the minimum standards set forth in this section shall not accept appointment as a training coordinator over a basic licensing course. If an application for appointment is found to be false or untrue or if the individual did not meet minimum standards at the time of appointment, the training provider must terminate the appointment if directed by the commission.

(f) If a training coordinator appointed over a basic licensing course no longer meets the minimum standards set forth in this section, the training provider must terminate the appointment if directed by the commission.

(g) If an individual does not complete the basic training coordinator course within six months of initial appointment as a training coordinator over a basic licensing course, the training provider must terminate the appointment if directed by the commission. The individual is not eligible for another appointment as a training coordinator until the basic training coordinator course is completed.

(h) In order to appoint an individual as a training coordinator over a basic licensing course, a training provider must have on file documentation, acceptable to the commission, that the individual meets the minimum standards for appointment. The training provider must submit an appointment application and receive approval from the commission before the individual may discharge the duties of a training coordinator.

(i) A training coordinator appointed over a basic licensing course must complete training coordinator specific continuing education biennially as prescribed by the commission.

(j) The effective date of this section is November 1, 2025.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 936-7700

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37 TAC §215.9

The Texas Commission on Law Enforcement (Commission) proposes amended 37 Texas Administrative Code §215.9, Training Coordinator. The proposed amended rule would require a training coordinator to report to the Commission the separation of a student from a basic licensing course. This would allow the Commission to better assess the operations of a training academy and to make the Commission, training providers, and prospective appointing agencies aware of these separated students.

Mr. John P. Beauchamp, General Counsel, has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no foreseeable fiscal implications to state or local governments as a result of enforcing or administering the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be a positive benefit to the public by providing data regarding the success and operations of training academies. There will be no anticipated economic costs to persons required to comply with the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no adverse economic effects to small businesses, microbusinesses, or rural communities as a result of implementing the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no effects to a local economy as a result of implementing the proposed amendment.

Mr. Beauchamp has determined the following:

(1) the proposed rule does not create or eliminate a government program;

(2) implementation of the proposed rule does not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule does not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule does not require an increase or decrease in fees paid to the agency;

(5) the proposed rule does create a new regulation by requiring training coordinators to submit reports of separation for students of a basic licensing course, which was previously allowed but not required;

(6) the proposed rule does not expand, limit, or repeal an existing regulation;

(7) the proposed rule does not increase or decrease the number of individuals subject to the rule's applicability; and

(8) the proposed rule does not positively or adversely affect this state's economy.

The Commission will accept comments regarding the proposed amended rule. The comment period will last 30 days following the publication of this proposal in the *Texas Register*. Comments may be submitted electronically to or in writing to Mr. John P. Beauchamp, General Counsel, Texas Commission on Law Enforcement, 6330 E. Highway 290, Suite 200, Austin, Texas 78723-1035.

The amended rule is proposed pursuant to Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, and §1701.153, Reports from Agencies and Schools. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701. Texas Occupations Code §1701.153 requires the Commission to establish reporting standards and procedures for the activities of licensed training schools and for matters the Commission considers necessary for the administration of Occupations Code Chapter 1701.

The amended rule as proposed affects or implements Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, and §1701.153, Reports from Agencies and Schools. No other code, article, or statute is affected by this proposal.

The proposed amended rule has been reviewed by legal counsel and has been found to be within the Commission's authority to adopt.

§215.9. Training Coordinator.

(a) A training coordinator must hold a valid instructor license or certificate and must be a full-time paid employee of that Training Provider.

(b) The training coordinator must:

(1) ensure compliance with commission rules and guidelines;

(2) prepare, maintain, and submit the following reports within the time frame specified:

(A) reports of training:

(i) basic licensing course shall be submitted prior to students attempting a licensing exam; and

(ii) within 30 days of completion of continuing education course;

(B) self-assessment reports as required by the commission;

(C) a copy of advisory board minutes during an on-site evaluation;

(D) training calendars-schedules must be available for review and posted on the internet, or another public venue, no later than 30 days prior to the beginning of each calendar quarter or academic semester. A continually updated and posted (live) calendar will meet this requirement; and

(E) any other reports or records as requested by the commission;

(3) report the separation of any student who fails to complete a basic licensing course on a form prescribed by the commission within 30 days;

(4) be responsible for the administration and conduct of each course, including those conducted at ancillary sites, and specifically:

(A) appointing and supervising qualified instructors;

(B) maintaining course schedules and training files. At a minimum, training files shall contain:

(i) complete lesson plan;

(ii) clear learning objectives;

(iii) instructor biography indicating subject matter expertise and teaching experience;

(iv) approved class roster and original sign-in sheet; and

(v) course evaluation;

(C) enforcing all admission, attendance, retention, and other standards set by the commission and approved by the advisory board;

(D) securing and maintaining all facilities necessary to meet the inspection standards of this section;

(E) controlling the discipline and demeanor of each student and instructor during class;

(F) distributing a current version of the Texas Occupations Code, Chapter 1701 and commission rules to all students at the time of admission to any course that may result in the issuance of a license;

(G) distributing learning objectives to all students at the beginning of each course;

(H) ensuring that all learning objectives are taught and evaluated;

(I) proctoring or supervising all examinations to ensure fair, honest results; and

(J) maintaining training files, records of tests, and other evaluation instruments for a period of five years;

(5) [~~(4)~~] receive all commission notices on behalf of the training provider and forward each notice to the appointing authority;

(6) [~~(5)~~] attend or have a designee attend each academy coordinator's workshop conducted by the commission. No person may serve as a representative for more than one provider per conference. Each representative must be affiliated with the training provider; and

(7) [~~(6)~~] notify the commission of any failed medical (L-2) or psychological (L-3) examination within 30 days on a form prescribed by the commission.

(c) If the position of training coordinator becomes vacant, upon written request from the chief administrator of the training provider the commission may, at the discretion of the executive director, waive the requirements for a period not to exceed six months.

(d) Upon written request from the chief administrator of a training provider that does not have a full-time paid staff, the commission may, at the discretion of the executive director, waive the requirements in subsection (a) of this section.

(e) The effective date of this section is November 1, 2025 [~~May 1, 2025~~].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502510
Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
Earliest possible date of adoption: August 24, 2025
For further information, please call: 5129367700

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CHAPTER 223. ENFORCEMENT

37 TAC §223.19

The Texas Commission on Law Enforcement (Commission) proposes amended 37 Texas Administrative Code §223.19, License Revocation. The proposed amended rule would require the Commission to revoke the license of a licensee that is convicted or placed on community supervision for an offense under Chapter 39 of the Texas Penal Code. This conforms with the Commission's standard practice of seeking revocation for abuse of office offenses. The proposed amended rule would also allow the Commission to revoke the license of a licensee that is convicted or placed on community supervision for an offense committed against a vulnerable person, as defined, or any offense involving cruelty to animals because Commission licensees, in their position of authority, need to be trusted to safely and ethically exercise care, custody, or control over members of the public.

Mr. John P. Beauchamp, General Counsel, has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no foreseeable fiscal implications to state or local governments as a result of enforcing or administering the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be a positive benefit to the public by ensuring that Texas is served by ethical law enforcement professionals and by removing licensees that have demonstrated a possible danger to the public. There will be no anticipated economic costs to persons required to comply with the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no adverse economic effects to small businesses, microbusinesses, or rural communities as a result of implementing the proposed amendment.

Mr. Beauchamp has determined that for each year of the first five years this proposed amended rule will be in effect, there will be no effects to a local economy as a result of implementing the proposed amendment.

Mr. Beauchamp has determined the following:

(1) the proposed rule does not create or eliminate a government program;

(2) implementation of the proposed rule does not require the creation of new employee positions or the elimination of existing employee positions;

(3) implementation of the proposed rule does not require an increase or decrease in future legislative appropriations to the agency;

(4) the proposed rule does not require an increase or decrease in fees paid to the agency;

(5) the proposed rule does not create a new regulation;

(6) the proposed rule does expand an existing regulation, but does not limit or repeal an existing regulation, by allowing for revocation of a license for certain offenses that previously would have resulted in license suspension;

(7) the proposed rule does not increase or decrease the number of individuals subject to the rule's applicability; and

(8) the proposed rule does not positively or adversely affect this state's economy.

The Commission will accept comments regarding the proposed amended rule. The comment period will last 30 days following the publication of this proposal in the *Texas Register*. Comments may be submitted electronically to or in writing to Mr. John P. Beauchamp, General Counsel, Texas Commission on Law Enforcement, 6330 E. Highway 290, Suite 200, Austin, Texas 78723-1035.

The amended rule is proposed pursuant to Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, and Texas Occupations Code §1701.501, Disciplinary Action. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701 and to establish minimum standards relating to the competence and reliability, including the education, training, physical, and mental standards, for licensing as an officer, county jailer, or telecommunicator. Texas Occupations Code §1701.501 authorizes the Commission to establish procedures for the revocation of a license and to adopt other necessary enforcement procedures.

The amended rule as proposed affects or implements Texas Occupations Code §1701.151, General Powers of the Commission; Rulemaking Authority, and Texas Occupations Code §1701.501, Disciplinary Action. No other code, article, or statute is affected by this proposal.

The proposed amended rule has been reviewed by legal counsel and has been found to be within the Commission's authority to adopt.

§223.19. License Revocation.

(a) The license of a person convicted of a felony shall be immediately revoked.

(b) The license of a person convicted or placed on community supervision for an offense directly related to the duties and responsibilities of any related office held by that person may be revoked. In determining whether an offense directly relates to such office, the commission will consider:

(1) the nature and seriousness of the crime;

(2) the relationship of the crime to the purpose for requiring a license for such office;

(3) the extent to which a license might offer an opportunity to engage in further criminal activity of the same type as that in which the person previously had been involved; and

(4) the relationship of the crime to the ability, capacity, or fitness required to perform the duties and discharge the responsibilities of such office.

(c) The license of a person convicted or placed on community supervision for any offense involving family violence shall be revoked.

(d) The license of a person convicted or placed on community supervision for any offense under Chapter 39 of the Texas Penal Code shall be revoked.

(e) The license of a person convicted or placed on community supervision for any offense committed against a vulnerable person may be revoked. A vulnerable person includes, but is not limited to:

(1) a person under the age of 18;

(2) a person over the age of 65;

(3) a disabled person;

(4) an intoxicated or incapacitated person; and

(5) a person under the care, custody, or control of the actor.

(f) The license of a person convicted or placed on community supervision for any offense involving cruelty to animals may be revoked.

(g) [~~(d)~~] The license of a person who is noncompliant for the third time in obtaining continuing education shall be revoked.

(h) [~~(e)~~] The license of a person who has received a dishonorable discharge from the armed forces of the United States shall be revoked.

(i) [~~(f)~~] The license of a person who has made, submitted, caused to be submitted, or filed a false or untruthful report to the commission may be revoked.

(j) [~~(g)~~] The license of a person who has been found to be in unauthorized possession of any commission licensing examination or portion of a commission licensing examination, or a reasonable facsimile shall be revoked.

(k) [~~(h)~~] Revocation permanently bars the person from any future licensing or certification by the commission.

(l) [~~(i)~~] A revoked license cannot be reinstated unless the licensee provides proof of facts supporting the revocation have been negated, such as:

(1) the felony conviction has been reversed or set aside on direct or collateral appeal, or a pardon based on subsequent proof of innocence has been issued;

(2) the dishonorable or bad conduct discharge has been upgraded to above dishonorable or bad conduct conditions; or

(3) the report alleged to be false or untruthful was found to be truthful.

(m) [~~(j)~~] During the direct appeal of any appropriate conviction, a license may be revoked pending resolution of the mandatory direct appeal. The license will remain revoked unless and until the holder proves that the conviction has been set aside on appeal.

(n) [~~(k)~~] The holder of any revoked license may informally petition the executive director for reinstatement of that license based upon proof by the licensee that the facts supporting the revocation have been negated.

(o) [~~(l)~~] If granted, the executive director shall inform the commissioners of such action no later than at their next regular meeting.

(p) [~~(m)~~] If denied, the holder of a revoked license may petition the commission for a hearing to determine reinstatement based upon the same proof.

(q) [~~(n)~~] The effective date of this section is November 1, 2025 [~~June 1, 2022~~].

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

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Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
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For further information, please call: (512) 936-7700

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TITLE 43. TRANSPORTATION

PART 10. TEXAS DEPARTMENT OF MOTOR VEHICLES

CHAPTER 211. CRIMINAL HISTORY OFFENSE AND ACTION ON LICENSE

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code, (TAC) §211.1 and §211.2; repeal of §§211.3 - 211.6; and new §§211.10 - 211.13. The proposed amendments, repeals, and new sections are necessary to: organize the rules into two subchapters for consistency with other chapters in TAC Title 43, clarify the types of licenses to which the chapter applies, clarify which crimes relate to the duties and responsibilities of these license holders, delete duplicative language found in statute, conform rule language with statutory changes, clarify existing requirements, and modernize language and improve readability. Proposed language also conforms with Senate Bill (SB) 224, 88th Legislature, Regular Session (2023), which amended the Penal Code to add felony offenses involving damage to motor vehicles during the removal or attempted removal of a catalytic converter. The proposed language implements SB 2587, 89th Legislature, Regular Session (2025), which clarified the persons from whom the department could require a fingerprint-based criminal history background check; and SB 1080, 89th Legislature, Regular Session (2025), which added circumstances in which a state agency is required to revoke a license upon imprisonment of the license holder.

EXPLANATION. The department is conducting a review of its rules under Chapter 211 in compliance with Government Code, §2001.039. Notice of the department's plan to conduct this review is also published in this issue of the *Texas Register*. As a part of the review, the department is proposing necessary amendments, repeals, and new sections as detailed in the following paragraphs.

Occupations Code, Chapter 53 and §§2301.651, 2302.104, 2302.105, and 2302.108, and Transportation Code, §503.034 and §503.038 authorize the department and its board to in-

vestigate and act on a license application, or on a license, when a person has committed a criminal offense. Chapter 211 allows the department to maintain fitness standards for license holders with prior criminal convictions while implementing the legislature's stated statutory intent in Occupations Code, §53.003 to enhance opportunities for a person to obtain gainful employment after the person has been convicted of an offense and discharged the sentence for the offense.

The department must follow the requirements of Occupations Code, Chapter 53 to determine whether a person's past criminal history can be considered in evaluating the person's fitness for licensing.

Occupations Code, §53.021 gives a licensing authority the power to suspend or revoke a license, to disqualify a person from receiving a license, or to deny a person the opportunity to take a licensing examination on the grounds that the person has been convicted of: (1) an offense that directly relates to the duties and responsibilities of the licensed occupation; (2) an offense listed in Article 42A.054, Code of Criminal Procedure; or (3) a sexually violent offense, as defined by Article 62.001, Code of Criminal Procedure. The department's evaluation of past criminal history applies to all license applications. Under Occupations Code, §53.021(a)(1), the department is responsible for determining which offenses directly relate to the duties and responsibilities of a particular licensed occupation.

Occupations Code, §53.022 sets out criteria for determining whether an offense directly relates to the duties and responsibilities of the licensed occupation. Based on those criteria, the department has determined that certain offenses directly relate to the duties and responsibilities of an occupation licensed by the department. However, conviction of an offense that directly relates to the duties and responsibilities of the licensed occupation or is listed in Occupations Code, §53.021(a)(2) and (3) is not an automatic bar to licensing; the department must consider the factors listed under Occupations Code, §53.023 in making its fitness determination. The factors include, among other things, the person's age when the crime was committed, rehabilitative efforts, and overall criminal history. The department is required to publish guidelines relating to its practice under this chapter in accordance with Occupations Code, §53.025.

The proposed rule amendments also conform with SB 1080, 89th Legislature, Regular Session (2025) which amended Occupations Code, §53.021 effective May 27, 2025, to add circumstances in which a state agency must revoke a license upon imprisonment of a license holder, and SB 2587, 89th Legislature, Regular Session (2025), which amended Government Code, §411.12511, effective September 1, 2025, and clarified which persons the department could obtain fingerprint-based criminal history record information.

Proposed New Subchapter A, General Provisions

Chapter 211 currently contains only one subchapter. The proposed amendments would divide Chapter 211 into two subchapters. A proposed amendment would retitle Subchapter A "General Provisions," consistent with the organization and naming conventions found in Chapters 215 and 221 of this title. This proposed amendment would provide consistency and improve readability because Chapter 211 applies to the same applicants and license holders as Chapters 215 and 221. Sections 211.1 and 211.2 are proposed for inclusion in retitled Subchapter A for consistency and ease of reference.

A proposed amendment to the title of §211.1 would add "Purpose and" to the section title to indicate that proposed amendments to this section include the purpose for the chapter in addition to definitions. This proposed change would place the chapter purpose description in the same subchapter and in the same order as similar language in Chapters 215 and 221 of this title for improved understanding and readability. Proposed new §211.1(a) would describe the purpose of Chapter 211 by incorporating existing language from current §211.3(a). The proposed amendments would add at the end of proposed new §211.1(a) new language describing the department's obligation to review the criminal history of license applicants before issuing a new or renewal license and the option for the department to act on the license of an existing license holder who commits an offense during the license period, consistent with Occupations Code, Chapter 53 and §§2301.651, 2302.104, 2302.105, and 2302.108, and Transportation Code, §503.034 and §503.038, and existing department procedures.

A proposed amendment to §211.1 would reorganize the current definitions into a subsection (b). Proposed amendments to §211.1(b)(2) would delete references to "registration, or authorization," add an "or" to §211.1(b)(2)(B), delete an "or" and add sentence punctuation in §211.1(b)(2)(C), and delete §211.1(b)(2)(D). These proposed amendments would clarify that Chapter 211 only applies to licenses issued by the department under Transportation Code, Chapter 503 and Occupations Code, Chapters 2301 and 2302, and does not apply to registrations the department may issue under the authority of another Transportation Code chapter. Registrations or permits that the department issues under other Transportation Code chapters do not currently require a review of an applicant's criminal history. Proposed amendments to §211.1(b)(3) would delete the current list of specific retail license types and define the term "retail" by listing only those license types that are not considered to be retail. This proposed amendment would shorten the sentence to improve readability without changing the meaning or scope of the definition. Additionally, this proposed amendment would eliminate the need to update the rule if a future statutory change created a new type of vehicle or retail license type or changed the name of an existing vehicle type or retail licensing type.

A proposed amendment to the title of §211.2 would substitute "Chapter" for "Subchapter" for consistency with the rule text. A proposed amendment in §211.2(b) would add a comma after Occupations Code for consistency in punctuation.

The remaining sections in Subchapter A are proposed for repeal as each of these sections are proposed for inclusion in new Subchapter B.

Proposed New Subchapter B, Criminal History Evaluation Guidelines and Procedures

A proposed amendment would add a new subchapter, Subchapter B. Criminal History Evaluation Guidelines and Procedures. Proposed for inclusion in new Subchapter B are new sections §§211.10- 211.13. These new proposed sections would contain the guidelines and procedures rule language currently found in §§211.3-211.6 with the addition of the proposed changes described below.

Proposed new §211.10 would include the rule text of current §211.3 with changes as follows. Current §211.3(a) would be deleted because that language has been incorporated into proposed new §211.1(a), which describes the purpose of Chapter 211. Proposed new §211.10(a) would incorporate the language

of current §211.3(b), except for the last sentence which duplicates a statutory requirement in Occupations Code, §53.022 and does not need to be repeated in rule. Proposed new §211.10(b) would recodify language that is currently in §211.3(c), except for §§211.3(c)(1) and (2), which are redundant and unnecessary statutory references.

Proposed new §211.10(c) would incorporate §211.3(d) with the following changes. Proposed new §211.10(c) would add a comma to correct missing punctuation after "Occupations Code" and would delete three sentences that specify which offenses apply to a license type. Proposed new §211.10(c) would include clarifying paragraph numbers: paragraph (1) would identify offenses that apply to all license types, and paragraph (2) would separate and identify additional offenses that apply only to retail license types. The proposed new language would add clarity and improve readability. Proposed new language would divide the offense categories currently in §§211.3(d)(1)- (16) between the new paragraphs as relettered subparagraphs of §211.10(c)(1) and (2).

Proposed new §211.10(c)(1)(B), would incorporate language currently in §211.3(d)(2) and add language to clarify that offenses involving forgery, falsification of records, or perjury include the unauthorized sale, manufacturing, alteration, issuance, or distribution of a license plate or temporary tag. This proposed clarifying language provides additional notice to applicants and license holders that the department considers forging or falsification of license plates or temporary tags to be a serious and potentially disqualifying offense.

Proposed new §211.10(c)(1)(E) would incorporate language currently in §211.3(d)(5) and add possession and dismantling of motor vehicles to the list of felony offenses under a state or federal statute or regulation that could potentially be disqualifying. Proposed new §211.10(c)(1)(E) would also include motor vehicle parts to clarify that disqualifying felony offenses include crimes related to motor vehicle parts as well as to motor vehicles. These two proposed amendments are important due to the consumer harm caused by "chop shops" that dismantle stolen vehicles and illegally sell parts, and the increasing frequency of motor vehicle parts theft, including catalytic converters, tailgates, batteries, wheel rims, and tires.

Proposed new §211.10(c)(1)(G) would incorporate language currently in §211.3(d)(7) and would clarify that an offense committed while engaged in a licensed activity or on a licensed premises includes falsification of a motor vehicle inspection required by statute. This clarification is important because emissions inspections in certain counties are required by law and harm the health and safety of Texas citizens if not performed.

Proposed new §211.10(c)(1)(I) would add that offenses of attempting or conspiring to commit any of the foregoing offenses are potentially disqualifying offenses because the person intended to commit an offense. This proposed new language incorporates language from current §211.3(d)(16). The language regarding conspiracies or attempts to commit the offenses must be included in the paragraph that applies to all license holders and the paragraph that applies to retail license types because the related crimes for each are proposed to be reorganized into separate paragraphs to improve readability.

Proposed new §211.10(c)(2)(E) would make felony offenses under Penal Code, §28.03 potentially disqualifying when a motor vehicle is damaged, destroyed, or tampered with during the removal or attempted removal of a catalytic converter. This new amendment aligns with SB 224, 88th Legislature, Regular Session (2023), which amended Penal Code, §28.03 to create a state jail felony for damage to a motor vehicle because of removal or attempted removal of the catalytic converter.

Proposed new §211.10(c)(2)(D) would incorporate §211.3(d)(12) and would add two additional offenses against the family: Penal Code, §25.04 and §25.08. Penal Code, §25.04 includes offenses involving the enticement of a child away from the parent or other responsible person, and Penal Code, §25.08 includes offenses related to the sale or purchase of a child. These offenses are relevant to the retail professions licensed by the department because parents frequently bring children to a dealership when considering a vehicle purchase, and a retail license holder may have unsupervised access to a child while a parent test-drives a vehicle or is otherwise engaged in viewing or inspecting a vehicle offered for sale. License holders also have access to the parent's motor vehicle records, including the family's home address. A person with a predisposition to commit these types of crimes would have the opportunity to engage in further similar conduct.

Proposed new §211.10(c)(2)(F) would incorporate the language of current §211.3(d)(13), and clarify that the department would consider any offense against the person to be potentially be disqualifying, would add a reference to Penal Code, Title 5, and would further clarify that an offense in which use of a firearm resulted in fear, intimidation, or harm of another person would be included in the list of potentially disqualifying crimes. Additionally, proposed new §211.10(c)(2)(F) would clarify that a felony offense of driving while intoxicated that resulted in harm to another person may also be potentially disqualifying. The department considers these offenses to be related to the occupations of retail license holders because these license holders have direct contact with members of the public during vehicle test drives or other settings in which no one else is present, and retail license holders have access to an individual's motor vehicle records, including the individual's home address. A person with a predisposition for violence or a tendency toward intoxicated driving would have the opportunity in these situations to engage in further similar conduct. These proposed amendments would further clarify which offenses against a person the department considers directly related to the licensed occupation and therefore potentially disqualifying. The department's consideration of these crimes is subject to certain limitations in Occupations Code, Chapter 53.

Proposed new §211.11 would incorporate language from current §211.4, with the addition of proposed new §211.11(a), which would clarify that the department will deny a pending application if an applicant or an applicant's representative as defined in §211.2(a)(2) is imprisoned. Occupations Code, §53.021(b) requires an agency to revoke a license holder's license on the license holder's imprisonment following a felony conviction, felony community supervision revocation, revocation of parole, or revocation of mandatory supervision. Because the department also determines licensure eligibility based on individuals serving as representatives for the license holder, the department will consider the effect of imprisonment of those persons on a license holder. Because license revocation for a felony conviction is mandatory in Occupations Code, §53.021(b), the department must also deny a pending application. An applicant who is imprisoned may reapply once the applicant is no longer imprisoned and an applicant whose application is denied based on an imprisoned individual serving in a representative capacity may choose a different representative and reapply for licensure. Proposed new §211.11(b) would implement SB 1080, 89th Leg-

islature (2025), which amended Occupations Code, §53.021 to require the department to revoke a license if the license holder is imprisoned following a felony conviction for an offense that directly relates to the duties and responsibilities of the licensed occupation, an offense in Code of Criminal Procedure, Article 42A.054, or a sexually violent offense in Code of Criminal Procedure, Article 62.001. Proposed amendments to new §211.11(b) would also incorporate the existing language from current §211.4(c) as phrased in Occupations Code, §53.021(b). Proposed new §211.11(c) incorporates language from current §211.4(d). Proposed new §211.11(d) incorporates language from current §211.4(c).

Proposed new §211.12 would incorporate without change the language in current §211.5 that addresses the procedure for a person to obtain a criminal history evaluation letter from the department. This process allows a person to request an evaluation prior to applying for a license if the person so desires.

Proposed new §211.13(a) would incorporate the current language of §211.6(a) and would clarify that fingerprint requirements apply to "an applicant for a new or renewal license" to improve readability without changing meaning. Proposed §211.13(b) would move the introductory phrase "Unless previously submitted for an active license issued by the department," to proposed §211.13(c) to improve readability and to allow the department to further clarify submission requirements in §211.13(c). Proposed new §211.13(b)(1) would incorporate the language of current §211.6(b)(1) and would clarify that an applicant includes an owner, member, partner, or trust beneficiary. This is a clarification rather than an extension of the existing requirements for the fingerprinting of applicants, because each of these categories has an ownership interest in the license. If the owner is a trust, the license is a trust asset, and each beneficiary is an equitable owner of the trust's assets. It is necessary for the department to fingerprint trust beneficiaries along with other owners because doing so will prevent a bad actor with a history of criminal offenses that directly relate to the duties and responsibilities of a license holder from obtaining a license from the department by using a trust to hide the bad actor's identity and then using that license to perpetrate, or benefit from, fraudulent and criminal actions, or otherwise take advantage of the position of trust created by the license. These proposed amendments are consistent with Government Code, §411.12511, as amended by SB 2587, 89th Regular Session (2025).

Proposed new §211.13(b)(2) would incorporate the language of current §211.6(b)(2) and would clarify that a person acting in a representative capacity includes an officer, director, manager, trustee, principal, manager of business affairs, or other employee whose act or omission in the course or scope of the representation would be cause for denying, revoking, or suspending a license. The proposed language recognizes that many license holders are small businesses that may employ only one or a few employees and may assign or delegate key management tasks such as administering the temporary tag or license plate system for the license holder, and that a principal may be a representative and not necessarily an owner of the applicant. These proposed amendments are consistent with Government Code, §411.12511, as amended by SB 2587, 89th Regular Session (2025).

Proposed new §211.13(c) would incorporate the current language of §211.6(c) and the introductory phrase from §211.6(b), and would further clarify that the department will not require a person to submit fingerprints if the person previously submitted a complete and acceptable set of fingerprints, and the person remains fully enrolled in the Texas Department of Public Safety's (DPS) criminal history clearinghouse and validly subscribed in the federal criminal history database maintained by the Federal Bureau of Investigation (FBI). This clarification is important as DPS or the FBI may change the enrollment or subscription status of a person previously fingerprinted if, for example, a court expunges a crime from a person's criminal history record. If DPS or the FBI change a person's enrollment or subscription status, the department must require the person to be fingerprinted again, or the department will not be able to access that person's criminal history records for use in evaluating the license application.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the proposal will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Monique Johnston, Director of the Motor Vehicle Division, has determined that there will be no significant impact on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Ms. Johnston also determined that, for each year of the first five years the proposal is in effect, public benefits are anticipated, and that applicants and license holders will not incur costs to comply with the proposal. The anticipated public benefits include reduced opportunity for fraud and related crime, and improved public safety. Requiring fingerprints for a trust beneficiary will benefit the public by preventing bad actors with a history of criminal offenses that directly relate to the duties and responsibilities of a license holder from obtaining licenses by using a trust to hide their identity and then using those licenses to perpetrate, or benefit from, fraud and criminal actions, or otherwise take advantage of the position of trust created by the license.

Ms. Johnston anticipates that there will be no additional costs on regulated persons to comply with the submission and evaluation of information under this proposal because the rules do not establish any new requirements or costs for regulated persons unless the person commits a crime. The proposed requirement in §211.13(b)(1) for the fingerprinting of trust beneficiaries is a clarification of the existing requirement that applicant owners must be fingerprinted, as trust beneficiaries are equitable owners of the trust's assets. It therefore does not create a new fingerprinting requirement. Similarly, the proposed new language that allows the department to fingerprint an employee, who the applicant designates as an authorized representative in the application and whose acts or omission would be cause for denying, revoking, or suspending a license, is a clarifying example of "a person acting in a representative capacity" and not a new fingerprinting requirement. Additionally, Ms. Johnston anticipates that there will be no additional costs to regulated persons to comply with the fingerprint requirements under this proposal as the new section does not establish fees for fingerprinting or processing criminal background checks. Fees for fingerprinting and access to criminal history reports are established by DPS under the authority of Texas Government Code, Chapter 411.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by Government Code, §2006.002, the department has determined that this proposal will not have an adverse economic effect or disproportionate

economic impact on small or micro businesses. The department has also determined that the proposed amendments will not have an adverse economic effect on rural communities because rural communities are exempt from the requirement to hold a license under Transportation Code, §503.024. Therefore, under Government Code, §2006.002, the department is not required to perform a regulatory flexibility analysis.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that for each year of the first five years the proposed repeal and amendments are in effect the amendments will not create or eliminate a government program; will not require the creation of new employee positions and will not require the elimination of existing employee positions; will not require an increase or decrease in future legislative appropriations to the department; will not require an increase in fees paid to the department; will create new regulations and expand existing regulations, as described in the explanation section of this proposal; will repeal existing regulations in §§211.3 - 211.6; will increase the number of individuals subject to the rule's applicability regarding fingerprinting; and will not significantly benefit or adversely affect the Texas economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

SUBCHAPTER A. GENERAL PROVISIONS

43 TAC §211.1, §211.2

STATUTORY AUTHORITY. The department proposes amendments to Chapter 211 under Government Code, §411.122(d), which authorizes department access to criminal history record information maintained by DPS; Government Code, §411.12511, as amended by Senate Bill (SB) 2587, 89th Legislative Session (2025), which authorizes the department to obtain criminal history record information from DPS and the FBI for license applicants, license holders, and representatives whose act or omission would be cause for denying, revoking, or suspending a general distinguishing number or license issued under Transportation Code, Chapter 503, or Occupations Code, Chapters 2301 and 2302, Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution, sale, and lease of motor vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; Occupations Code, §2301.651, which gives the board authority to deny an application for a license, to revoke or suspend a license, to place on probation, or to reprimand a license holder if the applicant or license holder is unfit, makes a material misrepresentation, violates any law relating to the sale, distribution, financing, or insuring of motor vehicles, willfully defrauds a purchaser, or fails to fulfill a written agreement with a retail purchaser of a motor vehicle; Occupations Code, §2302.051, which authorizes the board to adopt rules as necessary to administer Occupations Code, Chapter 2302, Transportation Code, §503.002, which authorizes the board to adopt rules for the administration of Transportation Code, Chapter 503; and Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department.

CROSS REFERENCE TO STATUTE. Government Code, Chapter 411; Occupations Code, Chapters 53, 2301 and 2302; Transportation Code, Chapters 503 and 1002; Penal Code, Chapters 25, 28, 43, 49 and Title 5; and Code of Criminal Procedure, Article 42A and 62.

§211.1. Purpose and Definitions.

(a) The licenses issued by the department create positions of trust. License holder services involve access to confidential information; conveyance, titling, and registration of private property; possession of monies belonging to or owed to private individuals, creditors, and governmental entities; and compliance with federal and state environmental and safety regulations. License holders are provided with opportunities to engage in fraud, theft, money laundering, and related crimes, and to endanger the public through violations of environmental and safety regulations. Many license holders provide services directly to the public, so licensure provides persons predisposed to commit assaultive or sexual crimes with greater opportunities to engage in such conduct. To protect the public from these harms, the department shall review the criminal history of license applicants before issuing a new or renewal license and may take action on a license holder who commits an offense during the license period based on the guidelines in this chapter.

(b) When used in this chapter, the following words and terms have the following meanings, unless the context clearly indicates otherwise.

(1) "Department" means the Texas Department of Motor Vehicles.

(2) "License" means any license[, ~~registration, or authorization,~~] issued by the department under:

(A) Transportation Code, Chapter 503;

(B) Occupations Code, Chapter 2301; or

(C) Occupations Code, Chapter 2302.[~~; or~~]

[~~(D) any other license, registration, or authorization, that the department may deny or revoke because of a criminal offense of the applicant or license holder.~~]

(3) "Retail license types" means those license [~~holder~~] types which require holders to [~~that~~] interact directly with the public, [~~including salvage dealers, converters, independent mobility motor vehicle dealers, lease facilitators, and general distinguishing number holders for the following vehicle categories: all-terrain vehicle, light truck, motorcycle, motorhome, moped/motor scooter, medium~~

~~duty truck, neighborhood vehicle, other, passenger auto, recreational off-highway vehicle, and towable recreational vehicle,~~] but does not include other license types that do not generally interact directly with the public, including manufacturers, distributors, and general distinguishing number holders for the following vehicle categories: ambulance, axle, bus, engine, fire truck/fire fighting vehicle, heavy duty truck, transmission, wholesale motor vehicle dealer, and wholesale motor vehicle auction.

§211.2. Application of Chapter [~~Subchapter~~].

(a) This chapter applies to the following persons:

(1) applicants and holders of any license; and

(2) persons who are acting at the time of application, or will later act, in a representative capacity for an applicant or holder of a license, including the applicant's or holder's officers, directors, members, managers, trustees, partners, principals, or managers of business affairs.

(b) In this chapter a "conviction" includes a deferred adjudication that is considered to be a conviction under Occupations Code, §53.021(d).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502328
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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43 TAC §§211.3 - 211.6

STATUTORY AUTHORITY. The department proposes repeals to Chapter 211 under Government Code, §411.122(d), which authorizes department access to criminal history record information maintained by DPS; Government Code, §411.12511, which authorizes the department to obtain criminal history record information from DPS and the FBI for license applicants, license holders, and representatives whose act or omission would be cause for denying, revoking, or suspending a general distinguishing number or license issued under Transportation Code, Chapter 503, or Occupations Code, Chapters 2301 and 2302; Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution, sale, and lease of motor vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; Occupations Code, §2301.651, which gives the board authority to deny an application for a license, to revoke or suspend a license, to place on probation, or to reprimand a license holder if the applicant or license holder is unfit, makes a material misrepresentation, violates any law relating to the sale, distribution, financing, or insuring of motor vehicles, willfully defrauds a purchaser, or fails to fulfill a written agreement with a retail purchaser of a motor vehicle; Occupations Code, §2302.051, which authorizes the board to adopt rules as necessary to administer Occupations Code, Chapter 2302; Transportation Code, §503.002, which authorizes the board to adopt rules for the administration of Transportation Code, Chapter 503; and Transportation Code, §1002.001, which authorizes the board to adopt or rules that are necessary and appropriate to implement the powers and the duties of the department.

CROSS REFERENCE TO STATUTE. Government Code, Chapter 411; Occupations Code, Chapters 53, 2301 and 2302; Transportation Code, Chapters 503 and 1002; Penal Code, Chapters 25, 28, 43, 49 and Title 5; and Code of Criminal Procedure, Article 42A and 62.

§211.3. Criminal Offense Guidelines.

§211.4. Imprisonment.

§211.5. Criminal History Evaluation Letters.

§211.6. Fingerprint Requirements for Designated License Types.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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SUBCHAPTER B. CRIMINAL HISTORY EVALUATION GUIDELINES AND PROCEDURES

43 TAC §§211.10 - 211.13

STATUTORY AUTHORITY. The department proposes new sections to Chapter 211 under Government Code, §411.122(d), which authorizes department access to criminal history record information maintained by DPS; Government Code, §411.12511, which authorizes the department to obtain criminal history record information from DPS and the FBI for license applicants, license holders, and representatives whose act or omission would be cause for denying, revoking, or suspending a general distinguishing number or license issued under Transportation Code, Chapter 503, or Occupations Code, Chapters 2301 and 2302; Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution,

sale, and lease of motor vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; Occupations Code, §2301.651, which gives the board authority to deny an application for a license, to revoke or suspend a license, to place on probation, or to reprimand a license holder if the applicant or license holder is unfit, makes a material misrepresentation, violates any law relating to the sale, distribution, financing, or insuring of motor vehicles, willfully defrauds a purchaser, or fails to fulfill a written agreement with a retail purchaser of a motor vehicle; Occupations Code, §2302.051, which authorizes the board to adopt rules as necessary to administer Occupations Code, Chapter 2302; Transportation Code, §503.002, which authorizes the board to adopt rules for the administration of Transportation Code, Chapter 503; and Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department.

CROSS REFERENCE TO STATUTE. Government Code, Chapter 411; Occupations Code, Chapters 53, 2301 and 2302; Transportation Code, Chapters 503 and 1002; Penal Code, Chapters 25, 28, 43, 49 and Title 5; and Code of Criminal Procedure, Article 42A and 62.

§211.10. Criminal Offense Guidelines.

(a) Under Occupations Code, Chapter 53, the department may suspend or revoke an existing license or disqualify an applicant from receiving a license because of a person's conviction of a felony or misdemeanor if the crime directly relates to the duties and responsibilities of the licensed occupation.

(b) The department has determined under the factors listed in Occupations Code, §53.022 that offenses detailed in subsection (c) of this section directly relate to the duties and responsibilities of license holders, either because the offense entails a violation of the public trust, issuance of a license would provide an opportunity to engage in further criminal activity of the same type, or the offense demonstrates the person's inability to act with honesty, trustworthiness, and integrity. Such offenses include crimes under the laws of another state, the United States, or a foreign jurisdiction, if the offense contains elements that are substantially similar to the elements of an offense under the laws of this state. The list of offenses in subsection (c) of this section is in addition to offenses that are independently disqualifying under Occupations Code, §53.021.

(c) The list of offenses in this subsection is intended to provide guidance only and is not exhaustive of the offenses that may relate to a particular regulated occupation. After due consideration of the circumstances of the criminal act and its relationship to the position of trust involved in the particular licensed occupation, the department may find that an offense not described below also renders a person unfit to hold a license based on the criteria listed in Occupations Code, §53.022.

(1) The following offenses apply to all license types:

(A) offenses involving fraud, theft, deceit, misrepresentation, or that otherwise reflect poorly on the person's honesty or trustworthiness, including an offense defined as moral turpitude;

(B) offenses involving forgery, falsification of records, perjury, or the unauthorized sale, manufacturing, alteration, issuance, or distribution of a license plate or temporary tag;

(C) offenses involving the offering, paying, or taking of bribes, kickbacks, or other illegal compensation;

(D) felony offenses against public administration;

(E) felony offenses under a state or federal statute or regulation involving the manufacture, sale, finance, distribution, repair, salvage, possession, dismantling, or demolition, of motor vehicles or motor vehicle parts;

(F) felony offenses under a state or federal statute or regulation related to emissions standards, waste disposal, water contamination, air pollution, or other environmental offenses;

(G) offenses committed while engaged in a licensed activity or on licensed premises, including the falsification of a motor vehicle inspection required by statute;

(H) felony offenses involving the possession, manufacture, delivery, or intent to deliver controlled substances, simulated controlled substances, dangerous drugs, or engaging in an organized criminal activity; and

(I) offenses of attempting or conspiring to commit any of the foregoing offenses.

(2) The following additional offenses apply to retail license types:

(A) felony offenses against real or personal property belonging to another;

(B) offenses involving the sale or disposition of another person's real or personal property;

(C) a reportable felony offense conviction under Chapter 62, Texas Code of Criminal Procedure for which the person must register as a sex offender;

(D) an offense against the family as described by Penal Code, §§25.02, 25.04, 25.07, 25.072, 25.08, or 25.11;

(E) felony offenses under Penal Code, §28.03 involving a motor vehicle that is damaged, destroyed, or tampered with during the removal or attempted removal of a catalytic converter;

(F) offenses against the person under Penal Code, Title 5, including offenses in which use of a firearm resulted in fear, intimidation, or harm of another person, and in Penal Code, Chapter 49, a felony offense of driving while intoxicated that resulted in the harm of another person;

(G) a felony stalking offense as described by Penal Code, §42.072;

(H) a felony offense against public order and decency as described by Penal Code §§43.24, 43.25, 43.251, 43.26, 43.261, or 43.262; and

(I) offenses of attempting or conspiring to commit any of the foregoing offenses.

(d) When determining a person's present fitness for a license, the department shall also consider the following evidence:

(1) the extent and nature of the person's past criminal activity;

(2) the age of the person when the crime was committed;

(3) the amount of time that has elapsed since the person's last criminal activity;

(4) the conduct and work activity of the person before and after the criminal activity;

(5) evidence of the person's rehabilitation or rehabilitative effort while incarcerated or after release;

(6) evidence of the person's compliance with any conditions of community supervision, parole, or mandatory supervision; and

(7) other evidence of the person's present fitness, including letters of recommendation.

(e) It is the person's responsibility to obtain and provide to the licensing authority evidence regarding the factors listed in subsection (d) of this section.

§211.11. Imprisonment.

(a) The department shall deny a license application if the applicant or a person described by §211.2(a)(2) of this chapter (relating to Application of Chapter) is imprisoned while a new or renewal license application is pending.

(b) The department shall revoke a license upon the imprisonment of a license holder following a:

(1) felony conviction for:

(A) an offense that directly relates to the duties and responsibilities of the licensed occupation;

(B) an offense listed in Article 42A.054, Code of Criminal Procedure; or

(C) a sexually violent offense, as defined by Article 62.001, Code of Criminal Procedure;

(2) felony community supervision revocation;

(3) revocation of parole; or

(4) revocation of mandatory supervision.

(c) A person currently imprisoned because of a felony conviction may not obtain a license, renew a previously issued license, or act in a representative capacity for an application or license holder as described by §211.2(a)(2).

(d) The department may revoke a license upon the imprisonment for a felony conviction, felony community supervision revocation, revocation of parole, or revocation of mandatory supervision of a person described by §211.2(a)(2) of this chapter who remains employed with the license holder.

§211.12. Criminal History Evaluation Letters.

(a) Pursuant to Texas Occupations Code, Chapter 53, Subchapter D, a person may request that the department evaluate the person's eligibility for a specific occupational license regulated by the department by:

(1) submitting a request on a form approved by the department for that purpose; and

(2) paying the required Criminal History Evaluation Letter fee of $100.

(b) The department shall respond to the request not later than the 90th day after the date the request is received.

§211.13. Fingerprint Requirements for Designated License Types.

(a) The requirements of this section apply to an applicant for a new or renewal license for the license types designated in Chapter 215 or Chapter 221 of this title as requiring fingerprints for licensure.

(b) The following persons may be required to submit a complete and acceptable set of fingerprints to the Texas Department of Public Safety and pay required fees for purposes of obtaining criminal history record information from the Texas Department of Public Safety and the Federal Bureau of Investigation:

(1) a person, including an owner, member, partner, or trust beneficiary, applying for a new license, license amendment due to change in ownership, or license renewal; and

(2) a person acting in a representative capacity for an applicant or license holder who is designated as an authorized representative on a licensing application, including an officer, director, manager, trustee, principal, manager of business affairs, or other employee whose act or omission in the course or scope of the representation would be cause for denying, revoking, or suspending a license.

(c) After reviewing a licensure application and licensing records, the department will notify the applicant or license holder of which persons in subsection (b) of this section are required to submit fingerprints to the Texas Department of Public Safety. The department will not require a person to submit fingerprints if the person previously submitted a complete and acceptable set of fingerprints for a currently active license issued by the department, and the person remains fully enrolled in the Texas Department of Public Safety's criminal history clearinghouse and validly subscribed in the federal criminal history database maintained by the Federal Bureau of Investigation.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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CHAPTER 215. MOTOR VEHICLE DISTRIBUTION

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code (TAC) Subchapter B. Licenses, Generally, §215.83 and proposes new §215.91; proposes amendments to Subchapter D, General Distinguishing Numbers and In-Transit Licenses, §§215.133, 215.140, 215.141, 215.144, 215.150 - 215.152, 215.155, and 215.158; and proposes new §215.163. These amendments and new sections are necessary to implement House Bill (HB) 718, 88th Legislature, Regular Session (2023), Senate Bill (SB) 1902, 89th Legislature, Regular Session (2025), HB 5629, 89th Legislature, Regular Session (2025) and SB 1818, 89th Legislature, Regular Session (2025).

HB 5629 and SB 1818 amend Occupations Code, Chapter 55, effective September 1, 2025, to change state agency licensing requirements for military service members, military veterans, and military spouses. Because these requirements apply to all licenses issued by the department, a new rule, §215.91, is proposed in Subchapter B, Licenses, Generally, which would apply to all licenses issued by the department under Occupations Code, Chapter 2301, and Transportation Code, Chapter 503.

Proposed amendments to §215.83 would prevent any conflict or confusion with proposed new §215.91.

HB 718 amended Transportation Code, Chapter 503 to eliminate the use of temporary tags when purchasing a motor vehicle and replaced these tags with categories of license plates, effective July 1, 2025. HB 718 requires the department to determine new distribution methods, systems, and procedures, and set certain fees. Section 34 of HB 718 grants the department authority to adopt rules necessary to implement or administer these changes in law and required the department to adopt related rules by December 1, 2024. The department did so by publishing proposed rules in the April 26, 2024, issue of the *Texas Register* (49 TexReg 2717), and publishing adopted rules in the November 8, 2024, issue of the *Texas Register* (49 TexReg 8953). HB 718 required a Texas dealer, beginning July 1, 2025, to ensure that an assigned general issue license plate or set of license plates stayed with the vehicle if that vehicle is later sold to another Texas buyer.

However, SB 1902 changed that process to require a dealer to transfer a removed license plate to another vehicle of the same class within 10 days or dispose of the license plate according to department rules. SB 1902, effective July 1, 2025, requires the department to adopt implementing rules by October 1, 2025. Amendments to §§215.140, 215.141, 215.150 - 215.152, 215.155, and 215.158 are proposed to implement SB 1902.

In §215.151, amendments are also proposed to implement HB 718 to address circumstances in which the department would permit a dealer to mail or deliver a license plate or set of license plates to a buyer or a converter for attachment to a vehicle. These amendments are necessary because in prior rulemaking the department did not address circumstances in which a person other than a dealer should be able to affix a license plate to a vehicle because the vehicle is not at the dealer's location.

Proposed new §215.163, implements both HB 718 and SB 1902 to address license plate disposition when a license holder offers a vehicle for sale at auction or on consignment. This new rule is necessary because the department did not address disposition of license plates for these types of sales in prior rulemaking. During the rulemaking process, license holders raised questions about disposition of license plates when motor vehicles are sold at auctions or on consignment based on concerns that the department may require operational changes that would increase business costs. In November 2024, the department provided an early draft of this proposed new rule to the Motor Vehicle Industry Regulation Advisory Committee (MVIRAC). Committee members voted on formal motions and provided informal comments. The department incorporated input from this committee into this rule proposal, as well as comments from license holders that regularly hold or participate in motor vehicle auctions. In proposing this rule, the department seeks to minimize opportunities for license plate fraud related to auction and other consignment sales and to eliminate any unnecessary operational or cost impacts to license holders.

In June 2025, the MVIRAC reviewed drafts of the proposed revisions to §§215.141, 215.150, 215.151, 215.152, 215.155, 215.158, 215.163 and provided the department with feedback on those provisions. The department incorporated the feedback from the committee into this rule proposal.

Nonsubstantive amendments are proposed in §215.133 and §215.144 to modify language to improve readability by using consistent terminology.

EXPLANATION.

§215.83

Proposed amendments to §215.83 would delete subsection (i) and amend subsection (h) to replace specific requirements with a cross-reference to proposed new §215.91. These proposed amendments would ensure that the licensure requirements for military service members, military spouses and military veterans are consolidated into proposed new §215.91. These proposed amendments would thus avoid any confusion or conflict between §215.83 and proposed new §215.91.

§215.91

Proposed new §215.91(a) would implement Occupations Code, §55.002, which exempts an individual that holds a license from incurring a penalty for failing to renew a license in a timely manner because the individual was on active duty. Proposed new §215.91(b) would implement Occupations Code, §55.0041(a) and §55.0041(b), as amended by HB 5629 which require a state agency to issue a license to a military service member or military spouse within ten days if the member or spouse holds a current license issued by another state that is similar in the scope of practice to Texas requirements and is in good standing, or held the same Texas license within the past five years, if a military service member or military spouse submits an application and other required documents described in Occupations Code, §55.0041(b). Proposed new §215.91(b)(1) would describe the application and documents the military service member or military spouse must submit to the department. Proposed new §215.91(b)(2) would describe the department's review process after receiving an application and related documents, including confirming licensure and good standing in the other state and comparing licensing requirements to determine if the other state's requirements are similar in scope of practice. Proposed new §221.17(b)(2)(C) would state that the department will issue a provisional license upon receipt of a license application from a military service member, military veteran, or military spouse. This new provision would implement Occupations Code, §55.0041, as amended by SB 1818. Proposed new §215.91(b)(3) would inform an applicant that within 10 days, the department will either issue a license if the applicant meets the requirements in Occupations Code, §55.0041 or notify the applicant why the department is unable to issue a license. Proposed new §215.91(b)(3) would also inform an applicant that the license is subject to the requirements of this chapter and Occupations Code, Chapter 2301, and Transportation Code, Chapter 503, unless exempted or modified under Occupations Code, Chapter 55, consistent with Occupations Code, §55.0041(c). Proposed new §215.91(b) is necessary to implement Occupations Code, §55.0041 as amended by HB 5629. Proposed new §215.91(c) would inform a military service member, military veteran, or military spouse that this rule establishes requirements and procedures authorized or required by Texas law and does not affect any rights under federal law. Proposed new §215.91 would implement Occupations Code, Chapter 55, as amended by HB 5629, and would inform military service members, veterans, and military spouses regarding eligibility for special licensing consideration.

§215.133

Proposed amendments to §215.133(i), (j), and (k) would add "dealer" to describe the type of independent motor vehicle general distinguishing number (GDN) referenced in these subsec-

tions for consistency with phrasing in other rule subsections and to improve readability without changing meaning.

§215.140

A proposed amendment to §215.140(a)(6)(E) would delete a reference to dealer license plate storage requirements for assigned license plates for vehicles in inventory and add a reference to unassigned license plates. SB 1902 eliminated the requirement for a dealer to keep an inventory of assigned license plates. Instead, SB 1902 requires a dealer to keep a license plate removed from a sold vehicle and reassign that license plate to a sold vehicle of the same class within ten days or dispose of the license plate according to department rules.

§215.141

A proposed amendment to §215.141(a)(26) would expand the sanction for failure to securely store a license plate after July 1, 2025, to include failure to destroy a previously issued but not currently assigned license plate within the time prescribed by statute. This proposed amendment would implement SB 1902, which amended Transportation Code, §504.901 to require a dealer to either transfer a license plate removed from a vehicle to the same class of vehicle within ten days or dispose of the license plate no later than the tenth day after the license plate was removed from the vehicle.

A proposed amendment to §215.141(a)(34) would delete a sanction for failure to remove a license plate from a vehicle sold to an out-of-state buyer or from a vehicle sold for export and substitute a sanction for failure to remove a license plate from a vehicle as required by statute or rule. This proposed amendment is necessary to conform the language to the requirements of SB 1902, which requires dealers to remove a license plate from a vehicle that is transferred to or purchased by the dealer, and is necessary to conform with proposed new §215.163 which requires a dealer to remove a license plate from a vehicle in certain other circumstances such as before a vehicle is offered for sale at auction or on consignment.

§215.144

Proposed amendments to §215.144(i)(2) would add the phrase "GDN holder that acts as a " to clarify the type of motor vehicle auction referenced in subsection (i). Proposed amendments to §215.144(i)(2)(A) would substitute the phrase "before offering a vehicle for sale at auction" for "it offers for sale." These proposed amendments would improve readability by using consistent terminology without changing meaning.

§215.150

Proposed amendments to §215.150(a) and §215.150(e) would add a reference to a general issue license plate as a type of license plate that a buyer can transfer to a newly purchased vehicle, to implement SB 1902 because SB 1902 allows a dealer to transfer an existing buyer's general issue license plate to a purchased vehicle of the same class within ten days. A proposed amendment to §215.150(a)(2) would delete a reference to issuing a license plate if the vehicle did not come with a buyer's license plate because SB 1902 eliminated the requirement for a license plate to remain with a vehicle upon subsequent retail sale. A proposed amendment to §215.150(d)(3) would add a closed GDN to the list of circumstances in which a GDN dealer could no longer issue a buyer's license plate. The amendment recognizes that a dealer may choose to close a GDN issued by the department at any time, and after closure the person would not be a licensed GDN dealer under Transportation Code, Chapter 503, and therefore not authorized to issue a buyer's license plate or a buyer's temporary license plate. Proposed amendments to §215.150(f)(4) would delete a reference to license plates assigned to vehicles in inventory, delete unnecessary punctuation, and add a reference to unassigned license plates. SB 1902 eliminated the requirement for a dealer to keep an inventory of assigned license plates. Rather, SB 1902 requires a dealer to reassign a removed license plate within a ten-day window before disposing of the license plate.

§215.151

Proposed amendments throughout §215.151(a) and in §215.151(c) would add a reference to a general issue license plate as a type of license plate that a buyer can transfer to a newly purchased vehicle. These amendments implement SB 1902 because SB 1902 allows a dealer to transfer an existing buyer's general issue license plate to a purchased vehicle within ten days. Proposed amendments to §215.151(a)(3) would delete a reference to when a dealer must, or a governmental agency may, issue a buyer's license plate to the buyer of a used vehicle, and replace that language with issuing a buyer's license plate when the buyer does not have a general issue, specialty, personalized or other qualifying license plate to transfer to the vehicle. These amendments implement SB 1902, which no longer requires a license plate to remain with a vehicle and allows a previously issued general issue license plate to be reassigned to a different vehicle of the same class within ten days.

A proposed amendment to §215.151(c) would delete a reference to a vehicle that has an assigned license plate because SB 1902 eliminated the requirement for a license plate to remain assigned to a vehicle upon subsequent retail sale. Proposed amendments to §215.151(c) would add language to require the removal of any previously assigned license plate and require the dealer to reassign that license plate to a vehicle of the same class within ten days before disposing of that license plate when a buyer provides a different qualifying license plate to be assigned to a purchased vehicle. This proposed amendment would implement the requirements for plate transfer or disposal by a dealer in Transportation Code, §504.901, as amended by SB 1902. Proposed amendments to §215.151(d) would implement the requirements of SB 1902 by adding language that would allow a dealer to reassign a license plate to a vehicle of the same class within ten days, and deleting references to providing an assigned license plate to a Texas retail buyer or Texas dealer and references to voiding plates for vehicles sold to out-of-state or exporting buyers. These proposed amendments are necessary because SB 1902 eliminated the requirement for a license plate to remain assigned to a vehicle upon subsequent retail sale and instead requires a dealer to dispose of any license plate that is not reassigned after ten days according to department rules.

Proposed amendments would add new §215.151(e) to describe circumstances in which a dealer is not required to secure or affix an assigned license plate to a vehicle after a lawful sale. Proposed new §215.151(e)(1) would allow a retail buyer who purchases a vehicle for direct delivery to the buyer to authorize the dealer in writing to mail or securely deliver the dealer-assigned buyer's license plate to the buyer. Proposed new §215.151(e)(1) is necessary to accommodate lawful sales in which vehicles are shipped directly to a retail buyer, which is common in multi-vehicle or fleet purchases. Proposed new §215.151(e)(2) would allow a retail buyer to authorize a dealer in writing to mail or securely deliver a license plate or set of license plates to a licensed

converter who could then affix the assigned buyer's license plate to the vehicle once the vehicle is complete prior to delivery to the customer, or allow the converter to provide the license plate to the customer at vehicle delivery. Proposed new §215.151(e)(1) and new §215.151(e)(2) are necessary to facilitate delivery of a dealer-assigned buyer's license plate when a vehicle is sold in a retail transaction, but the purchased vehicle is not located at the dealer's licensed location.

§215.152

Proposed amendments to §215.152(c) and §215.152(d) would add "new" to describe the type of buyer's license plates that the department will be allocating to each dealer and would delete the term unassigned. These amendments would implement SB 1902, which amended Transportation Code, §504.901, to require a dealer to transfer an unassigned license plate to a purchased vehicle of the same class within 10 days or destroy the license plate.

A proposed amendment to §215.152(d)(4) would add "or decrease" to allow the department to decrease the annual allotment of license plates for dealers based on changes in the market, temporary conditions, or other relevant factors in the state, county, or other geographical or population area. For example, sales may decline during an economic recession, resulting in dealers needing fewer plates to assign to new cars. When this happens, the state should not incur the expense to manufacture or distribute license plates that will not be used, and a dealer should not be required to undergo the expense or effort to store and track a larger supply of license plates than what the dealer will likely use. To address this, a proposed amendment to §215.152(g) would allow a new dealer to request fewer buyer's license plates or buyer's temporary license plates than what would be allocated under §215.152(e).

Proposed new §215.152(i) describes the circumstances in which a dealer would not be eligible to receive a quarterly allocation of buyer's license plates delivered to the dealer's licensed physical location. These circumstances are: if the dealer's license has been closed, canceled, or revoked in a final order; if the department has issued a notice of department decision for a violation of premises requirements because the dealer appears to have abandoned the licensed location; if the dealer has been denied access to the temporary tag system or the license plate system; if a dealer fails a compliance review performed by the department under Transportation Code, §503.063(d); if the dealer's license expires during that quarter and a renewal application has not been submitted to the department; if a dealer does not have an owner or bona fide employee at the licensed location during posted business hours to accept a license plate delivery; or if a dealer fails to keep license plates or the license plate system secure. In accordance with Occupations Code, §2301.152, the department is responsible for reducing the opportunities for license plate fraud or misuse. This proposed new subsection is necessary for the department to fulfill that obligation.

Proposed new §215.152(j) would allow a dealer with an active license and access to the license plate database who is ineligible to receive a quarterly license plate allocation under subsection (i) to request that the department conduct a compliance review under Transportation Code, §503.063(d) to determine if the dealer is eligible to receive a future allocation. A dealer would be able to request a compliance review by submitting an email request to DealerCompliance@txdmv.gov, and the department will perform the requested compliance review within 14 days. This subsection would allow a dealer to become eligible for a future license plate allocation once the dealer passes a compliance review performed by the department, consistent with Transportation Code, §503.063(d).

Proposed new §215.152(k) would allow the department to require a dealer with an active license to obtain buyer's license plates from a county tax assessor-collector or department regional service center if the dealer is not eligible to receive license plates under §215.152(i). This proposed new subsection would allow a licensed dealer to continue to operate while the dealer addresses a security or other operational issue that would prevent the department from securely delivering license plates to the licensed location. A proposed amendment would reletter §215.152(i) to (l) to accommodate the three new proposed subsections described above.

A proposed amendment would add new §215.152(m), which would describe when a dealer may request fewer buyer's license plates or buyer's temporary license plates. A dealer may request fewer license plates after using less than 50 percent of the quarterly allocation of general issue license plates or buyer temporary license plates in a quarter, or after using less than 50 percent of the allotted annual maximum number of general issue license plates or buyer temporary license plates in a year. A dealer should not be required to undergo the expense or effort to store and track a significantly larger supply of license plates than what the dealer will use. Proposed amendments would reletter §215.152(j) to (n) and reletter remaining subsections accordingly to accommodate the new proposed subsections described above.

Proposed amendments to relettered §215.152(n) would add a reference to a dealer being able to request a decrease in a quarterly or annual allocation by submitting a request in the department's designated license plate system, and delete a reference to subsection (i). These amendments are necessary to inform a dealer how to request a decrease in a quarterly or annual buyer's license plate or buyer's temporary license plate allocation.

A proposed amendment to relettered §215.152(o) would add "or decrease" in recognition that a dealer may request a decrease in a maximum annual allotment. Proposed amendments throughout relettered §215.152(o) would delete "additional" to describe license plates because amendments to this rule are proposed to allow a dealer to request fewer license plates. A proposed amendment to relettered §215.152(o)(2) would delete the phrase "for more license plates" to describe the type of additional requests a dealer may submit because a dealer may submit additional requests for fewer license plates. A proposed amendment to relettered §215.152(o)(3)(D) would delete a reference to issuing no additional license plates because a dealer may request to reduce the number of license plates, and the department may deny that request. Proposed amendments to relettered §215.152(o)(3)(E)(ii) would delete a reference to additional license plates being added to the dealer's allocation and would substitute text to state that the dealer's allocation will be adjusted. These proposed amendments would recognize that a dealer's request for fewer license plates may be adjusted by the designated director in the department's Vehicle Titles and Registration Division. A proposed amendment to relettered §215.152(o)(3)(E)(ii) would add "informed about" to improve readability without changing meaning. A proposed amendment to relettered §215.152(o)(5) would delete a reference to additional license plates because this proposal would allow a dealer to submit a subsequent request for fewer license plates during a calendar year.

§215.155

Proposed amendments to §215.155(c) would delete §215.155(c)(2), which requires a selling dealer to provide a license plate to a purchasing dealer for placement on the vehicle at time of retail sale, and would modify related punctuation and numbering. These proposed amendments would implement SB 1902, which eliminated the requirement for an assigned license plate to stay with a vehicle upon a subsequent retail sale of the vehicle.

§215.158

Proposed amendments to §215.158(b) would delete a reference to removing a previously assigned buyer's license plate or other type of license plate for a vehicle sold to an out-of-state buyer or for another reason allowed by rule and would simplify the subsection to apply only when a dealer is required to void a previously assigned buyer's license plate from a vehicle. These proposed amendments would align the rule text with Transportation Code, §504.901, as amended by SB 1902, which requires a dealer to void a previously assigned buyer's license plate within 10 days unless the dealer has reassigned that license plate to another vehicle of the same class.

§215.163

Proposed new §215.163 would address how a license holder must manage a license plate or set of license plates for motor vehicles sold at auction or on consignment. Proposed new §215.163 is necessary to clarify license plate disposition and the reporting responsibilities of a dealer and a wholesale motor vehicle auction GDN holder when offering a motor vehicle for sale at a wholesale auction, and to clarify a dealer's responsibilities when offering a motor vehicle for sale at auction or on consignment at the dealer's licensed location consistent with the requirements of Transportation Code, §§503.063, 503.0633, and 504.901 as amended by HB 718 and SB 1902, effective July 1, 2025.

Proposed new §215.163(a) would address license plate disposition requirements for motor vehicles offered for sale at a wholesale motor vehicle auction, in which only dealers are allowed to purchase a motor vehicle under Transportation Code, §503.037. Proposed new §215.163(a) would require a wholesale motor vehicle auction GDN holder who receives a motor vehicle on consignment from a person who is not a GDN holder to remove and mark any license plate with the vehicle as void; and destroy, recycle, or return any license plate in keeping with the requirements of §215.158 (relating to General Requirements for Buyer's License Plates). Proposed new §215.163(a) is necessary to prevent Texas license plates from being distributed out-of-state or exported and used fraudulently. These proposed amendments are also consistent with Transportation Code, §503.063 and §504.901, as amended by HB 718 and SB 1902, which authorizes dealers to issue a buyer's license plate and access the license plate system but does not authorize motor vehicle auction license holders to do so.

Proposed new §215.163(b) would describe a dealer's license plate disposition responsibilities if a motor vehicle with a license plate is sold at a public auction, at which members of the public can bid on and purchase a motor vehicle. Proposed new §215.163(b) would require a dealer who is authorized to sell a consigned vehicle to return an assigned license plate to the vehicle's owner in keeping with Transportation Code §504.901(b), or destroy, recycle, or return the license plate in accordance with §215.158 (relating to General Requirements for Buyer's License Plates). The option for a dealer to destroy an assigned license plate is necessary because in some circumstances a dealer may be unable to return an assigned plate to the vehicle's owner. For example, a dealer could not do so if the vehicle's owner has died or the vehicle's owner relocated without a forwarding address. If a dealer offers a motor vehicle from the dealer's inventory for sale at a public auction, the dealer is required to remove and securely store the license plate before offering the vehicle for sale at a public auction as required in proposed 43 TAC §215.150(f) (relating to Dealer Authorization to Issue License Plates) and may reassign the license plate within ten days. If the purchaser is a Texas retail buyer, the dealer must issue a buyer's license plate to the purchaser and update the license plate database unless the buyer has a general issue, specialty, personalized, or other qualifying license plate to transfer, consistent with proposed amendments to 43 TAC §215.151 (relating to License Plate General Use Requirements). If the purchaser at the public auction is a dealer, export buyer, or out-of-state buyer, the selling dealer must not issue a buyer's license plate. Additionally, if the purchaser at an auction is an out-of-state buyer, the dealer may only issue a buyer's temporary license plate if the buyer requires this license plate to transport the vehicle to another state in accordance with Transportation Code, §503.063, as amended by HB 718, and with 43 TAC §215.150(c) (relating to Dealer Authorization to Issue License Plates). Proposed new §215.163(b) is necessary to clarify license plate disposition for different types of sales that can occur at a public auction and to minimize potential fraud or misuse of license plates that may occur, consistent with the requirements of Transportation Code, §503.063 and §504.901, as amended by HB 718 and SB 1902, and of proposed amendments to 43 TAC §§215.150, 215.151, and 215.158.

Proposed new §215.163(c) would implement dealer requirements for other types of consignment sales which occur at a dealer's licensed location and not at auction. Proposed new §215.163(c) is necessary to address license plate disposition for other types of consignment sales and to minimize potential fraud or misuse of license plates, consistent with the requirements of Transportation Code, §503.063 and §504.901, as amended by HB 718 and SB 1902, and the requirements of the department's adopted and proposed rules implementing HB 718. Proposed new §215.163(c)(1) would require a dealer to remove and return any license plate to the vehicle's owner. Proposed new §215.163(c)(1) would further clarify that a dealer may use its dealer's temporary license plate to demonstrate the consigned vehicle to a potential purchaser, in accordance with 43 TAC §215.138 (relating to Use of Dealer's License Plates).

Proposed new §215.163(c)(2) would align the requirements for dealer consignment sales with the general license plate disposition requirements in the department's rules implementing HB 718 adopted effective July 1, 2025. Proposed new §215.163(c)(2) would require a dealer, upon the sale of a consigned motor vehicle, to assign a license plate to a Texas retail buyer that purchases the vehicle unless the buyer has a general issue, specialty, personalized, or other qualifying license plate to transfer and to update the license plate database, consistent with 43 TAC §215.151 (relating to License Plate General Use Requirements). If the vehicle is sold to an out-of-state buyer, for export, or to a Texas dealer, a dealer may not issue a buyer's license plate and may only issue a buyer's temporary license plate if the out-of-state purchaser requires a license plate to transport the vehicle to another state for titling and registration in that jurisdiction.

Proposed new §215.163(c)(3) is necessary to clarify license plate disposition requirements for independent motor vehicle dealers whose business includes the sale of salvage vehicles or total loss vehicles as defined by the applicable insurance contract, and who may receive consignments from non-GDN holders such as insurance or finance companies. In these situations, an independent motor vehicle dealer must remove and destroy, recycle, or return the license plate as required in §215.158 (relating to General Requirements for Buyer's License Plates). Under Occupations Code, §2302.009, an independent motor vehicle dealer that acts as a salvage vehicle dealer or displays a motor vehicle as an agent of an insurance company must comply with Occupations Code, Chapter 2302, including the requirement to immediately remove any unexpired license plate. Requiring an independent motor vehicle dealer to either transfer or void, destroy, recycle, or return the license plate as required in §215.158 (relating to General Requirements for Buyer's License Plates) is necessary to reduce the risk of fraud or misuse of the plates, since salvage or total loss vehicles may not be driven on Texas roads. Proposed new §215.163(c) is necessary to minimize potential fraud or misuse of these license plates and is consistent with the requirements of Occupations Code, Chapter 2302, and Transportation Code, §503.063 and §504.901, as amended by HB 708 and SB 1902.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the rule will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal.

Monique Johnston, Director of the Motor Vehicle Division (MVD), Annette Quintero, Director of the Vehicle Titles and Registration Division (VTR), and Corrie Thompson, Director of the Enforcement Division (ENF), have determined that there will be not be a measurable effect on local employment or the local economy as a result of the proposal because the overall number of motor vehicle sales will not be affected.

PUBLIC BENEFIT AND COST NOTE. Ms. Johnston, Ms. Quintero, and Ms. Thompson have also determined that, for each year of the first five years amended and new sections are in effect, there are multiple public benefits anticipated because of the reduction in opportunities for license plate fraud, and that certain applicants and license holders may incur costs to comply with the proposal. The department prioritized the public benefits associated with reducing fraud and related crime and improving public health and safety, while carefully considering potential costs to license holders consistent with board and department responsibilities.

Anticipated Public Benefits. The public benefits anticipated as a result of the proposal include limiting the criminal activity of a small subset of dealers who may fraudulently obtain, sell, or issue license plates to persons seeking to engage in violent criminal activity, including armed robbery, human trafficking, and assaults on law enforcement, or to criminally operate uninsured and uninspected vehicles as a hazard to Texas motorists and the environment.

Anticipated Costs to Comply With The Proposal. Ms. Quintero anticipates that certain license holders may incur costs to comply with these proposed rules. In proposed new §215.151(e), a dealer could incur a fee to mail a license plate or set of license plates to a buyer or a converter when the buyer authorizes the dealer to do so in writing because the vehicle is being delivered directly to the buyer by a transporter or converter. Department research suggests that the average cost to mail a set of license plates is $10.10. Ms. Quintero has determined that the cost for a license holder to mail or otherwise securely transfer a license plate to a buyer or converter would be offset by a dealer's cost savings in not having to travel to a buyer's or converter's location to affix the assigned license plate, and is necessary to facilitate lawful sales in which the purchased vehicle is not at the dealer's licensed location. A dealer may choose to affix a buyer's license plate to a sold vehicle, or mail or securely transfer a license plate to a buyer or converter and can choose the method that is operationally efficient and cost effective. Industry stakeholders have requested this flexibility in affixing license plates to facilitate these types of vehicle sales.

Regarding proposed new §215.163, Ms. Quintero anticipates that while dealer GDN holders will not incur additional costs to comply with the proposed rule, wholesale motor vehicle auction GDN holders may incur costs to comply with this proposed rule. For dealers, proposed new §215.163 does not have any new cost requirements because the same requirements are already in place under other previously adopted rules or existing statutes.

However, this proposal may require wholesale motor vehicle auction GDN holders to make an operational change or incur a cost. The department can estimate certain associated costs. Proposed new §215.163 would require a wholesale motor vehicle auction GDN holder to permanently mark the front of license plates with the word "void" or a large "X". Department research suggests that the cost of a permanent marker is $1.35 per marker. Proposed new §215.163 would also require a wholesale motor vehicle auction GDN holder to destroy a void buyer's license plate, recycle a void plate with a registered metal recycler, or return the void plate to the department, or to a county tax assessor-collector. Aviation tin snips may be used to destroy a void license plate. Department research suggests that the cost of tin snips, which can cut metal, is approximately $18.50. A motor vehicle auction GDN holder may choose to recycle void license plates. Department research suggests that the cost of doing so through a metal recycler will vary by locality and the availability of local recycling facilities, with some regions benefitting from free curbside-pickup recycling programs and others requiring license holders to expend transportation costs to take the plates to a recycling facility. Department research also suggests that scrap aluminum, such as voided license plates, is currently worth an average of about $.65 per pound when sold to a metal recycler. Lastly, a motor vehicle auction GDN holder may return a void buyer's license plate to the department, including one of the regional service centers, or a county tax assessor-collector office, or mail a void plate to the department. Department research suggests that a typical average cost to mail a set of license plates is $10.10. The proposed rules provide a motor vehicle auction GDN holder with multiple options for responsible disposal of void license plates and each license holder may choose which option is least expensive or most convenient based on the license holder's operation. Ms. Quintero has reviewed the department research regarding the cost of marking and the options for destroying, recycling, or returning void license plates and has determined that these costs are reasonable and necessary to reduce the potential for fraudulent plate use and to protect the public, including law enforcement personnel. Indeed, it is possible that many wholesale motor vehicle auction GDN holders will incur no costs as a result of the proposed rule: the wholesale motor vehicle auction GDN holders who commented or provided informal feedback

on the draft rule stated that they already have existing systems in place to collect and dispose of license plates and to report vehicle transfers using the currently available web-based tools.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS.

As required by Government Code, §2006.002, the department has determined that this proposal may have an adverse economic effect or disproportionate economic impact on small or micro-businesses. More specifically, the department believes that the requirements in proposed new §215.163 for wholesale motor vehicle auction GDN holders may have an adverse impact if any motor vehicle auction GDN holder is a small or micro-business. The department does not believe the costs associated with shipping plates when requested by a buyer under certain circumstances in proposed amended §215.151 will create an adverse economic impact because the department believes the costs will be completely offset by the savings for a dealer from not having to travel to a buyer's or converter's location to affix a license plate to a sold vehicle. The department has determined that the proposed amendments will not have an adverse economic effect on rural communities because rural communities are exempt from the requirement to hold a GDN under Transportation Code, §503.024.

The cost analysis in the Public Benefit and Cost Note section of this proposal determined that the proposed new rule may result in additional costs for existing license holders. Based on data from the Comptroller and the Texas Workforce Commission, the department cannot determine if any wholesale motor vehicle auctions are small or micro-businesses but can estimate that most dealers are small or micro-businesses. The department has tried to minimize costs to both wholesale motor vehicle auction and dealer GDN holders. The proposed new requirements are designed to set minimum standards that will prevent license plate fraud and protect public health and safety and to allow these license holders to operate without incurring significant ongoing or unreasonable costs. These requirements do not include requirements that will cause a license holder to incur unnecessary or burdensome costs, such as employing additional persons.

Under Government Code, §2006.002, the department must perform a regulatory flexibility analysis. The department considered the alternatives of not adopting amendments, exempting small and micro-business license holders from these amendments, and adopting a limited version of these amendments for small and micro-business applicants and license holders. The department rejected all three options. The department reviewed licensing records, including records for license holders who have been denied access to the temporary tag system, and determined that small and micro-business license holders are largely the bad actors who have historically perpetrated fraud. The department, after considering the purpose of the authorizing statutes, does not believe it is feasible to waive or limit the requirements of the proposed amendments for small or micro-business GDN holders. Also, Government Code, §2006.002(c-1) does not require the department to consider alternatives that might minimize possible adverse impacts on small businesses and micro-businesses if the alternatives would not be protective of the health and safety of the state.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed new sections and amendments are in effect, no government program would be created or eliminated. Implementation of the proposed new sections and amendments would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or a decrease of fees paid to the department. The proposed rules create new regulations, specifically proposed new §215.91 and §215.163. It would limit existing regulations by allowing dealers to ship or deliver license plates to be affixed by others in certain situations in proposed amendments to §215.151, and by allowing for lesser license plate allocations in proposed amendments to §215.152. The proposed rule revisions would not expand or repeal an existing regulation. Lastly, the proposed new sections do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

SUBCHAPTER B. LICENSES, GENERALLY

43 TAC §215.83, §215.91

STATUTORY AUTHORITY. The department proposes amendments and a new section to Chapter 215 under Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution, sale, and lease of motor vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; Occupations Code, §2301.651, which gives the board authority to deny an application for a license, revoke or suspend a license, place on probation, or reprimand a licensee if the applicant or license holder is unfit, makes a material misrepresentation, violates any law relating to the sale, distribution, financing, or insuring of motor vehicles, willfully defrauds a purchaser, or fails to fulfill a written agreement with a retail purchaser of a motor vehicle; Government Code, §411.122(d), which authorizes department access to criminal history record information maintained by DPS; Government Code, §411.12511, as amended by Senate Bill (SB) 2587, 89th Legislature (2025), which authorizes the department to

obtain criminal history record information from DPS and the FBI for license applicants, license holders, and representatives whose act or omission would be cause for denying, revoking, or suspending a general distinguishing number or license issued under Transportation Code, Chapter 503, or Occupations Code, Chapters 2301 and 2302; Occupations Code, §55.004, as amended by House Bill (HB) 5629, 89th Legislature, which requires the department to adopt rules for the issuance of a license to military service members, military veterans, or military spouses that allow licensure if the applicant holds a current license issued by another state that is similar in scope to the license in Texas and is in good standing with that state's licensing authority, or has held a license in Texas within the preceding five years; Occupations Code, §2302.051, which authorizes the board to adopt rules as necessary to administer Occupations Code, Chapter 2302; Transportation Code, §503.002, which authorizes the board to adopt rules for the administration of Transportation Code, Chapter 503; Transportation Code, §503.009, which authorizes the board to adopt rules for certain contested cases; Transportation Code, §503.0296, which requires the board to adopt a rule requiring that an applicant for an original or renewal general distinguishing number who proposes to be an independent motor vehicle dealer complete web-based education and training developed or approved by the department; Transportation Code, §503.033, which authorizes the board to adopt rules prescribe the form of the notice of a surety bond and the procedure by which a claimant may recover against the surety bond; Transportation Code, §503.061, which requires the board to adopt rules regulating the issuance of dealer's license plates; and Transportation Code, §§503.0626, 503.0631, and 503.0632, which require the board to adopt rules necessary to implement and manage the department's temporary tag databases; and Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department, as well as the statutes referenced throughout this preamble.

The department also proposes amendments and a new rule under the authority of Transportation Code, §501.0041 and §502.0021; and Government Code, §§2001.004, and 2001.039, and 2001.054, in addition to the statutory authority referenced throughout this preamble.

Transportation Code, §501.0041 authorizes the department to adopt rules to administer Transportation Code, Chapter 501. Transportation Code, §502.0021 authorizes the department to adopt rules to administer Transportation Code, Chapter 502.

Government Code, §2001.004 requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures. Government Code, §2001.039 requires state agencies to readopt, readopt with amendments, or repeal a rule as the result of reviewing the rule. Government Code, §2001.054 specifies the requirements regarding the grant, denial, renewal, revocation, suspension, annulment, or withdrawal of a license.

CROSS REFERENCE TO STATUTE. This proposed new section would implement Government Code, Chapters 411 and 2001; Occupations Code, Chapters 53, 55, and 2301; and Transportation Code, Chapters 501-503, and 1002.

§215.83. License Applications, Amendments, or Renewals.

(a) An application for a new license, license amendment, or license renewal filed with the department must be:

(1) filed electronically in the department-designated licensing system on a form approved by the department;

(2) completed by the applicant, license holder, or authorized representative who is an employee, a licensed attorney, or a certified public accountant;

(3) accompanied by the required fee, paid by credit card or by electronic funds transfer, drawn from an account held by the applicant or license holder, or drawn from a trust account of the applicant's attorney or certified public accountant; and

(4) accompanied by proof of a surety bond, if required.

(b) An authorized representative of the applicant or license holder who files an application with the department on behalf of an applicant or license holder may be required to provide written proof of authority to act on behalf of the applicant or license holder.

(c) The department will not provide information regarding the status of an application, application deficiencies, or pending new license numbers to a person other than a person listed in subsection (a)(2) of this section, unless that person files a written request under Government Code, Chapter 552.

(d) Prior to the expiration of a license, a license holder or authorized representative must electronically file with the department a sufficient license renewal application. Failure to receive notice of license expiration from the department does not relieve the license holder from the responsibility to timely file a sufficient license renewal application. A license renewal application is timely filed if the department receives a sufficient license renewal application on or before the date the license expires.

(e) An application for a new license, license amendment, or license renewal filed with the department must be sufficient. An application is sufficient if the application:

(1) includes all information and documentation required by the department; and

(2) is filed in accordance with subsection (a) of this section.

(f) If an applicant, license holder, or authorized representative does not provide the information or documentation required by the department, the department will issue a written notice of deficiency. The information or documentation requested in the written notice of deficiency must be received by the department within 20 calendar days of the date of the notice of deficiency, unless the department issues a written extension of time. If an applicant, license holder, or authorized representative fails to respond or fully comply with all deficiencies listed in the written notice of deficiency within the time prescribed by this subsection, the application will be deemed withdrawn and will be administratively closed.

(g) The department will evaluate a sufficient application for a new license, license amendment, or license renewal in accordance with applicable rules and statutes to determine whether to approve or deny the application. If the department determines that there are grounds for denial of the application, the department may pursue denial of the application in accordance with Subchapter G of this chapter (relating to Administrative Sanctions).

(h) The department will process an application for a new license, license amendment, or license renewal filed by a military service member, military spouse, or military veteran in accordance with Occupations Code, Chapter 55 and §215.91 of this title (relating to License Processing for Military Service Members, Spouses, and Veterans). [~~A license holder who fails to timely file a sufficient application for a license renewal because that license holder was on active duty is exempt~~

from any increased fee or penalty imposed by the department for failing to renew the license in a timely manner.]

[(i) A military service member or military spouse may engage in a business or occupation for which a department issued license is required if the military service member or military spouse meets the requirements of Occupations Code, §55.0041 and this section. This section establishes requirements and procedures authorized or required by Occupations Code, Chapter 55, and does not modify or alter rights that may be provided under federal law.]

[(1) A military service member or military spouse must submit to the department:]

[(A) notice of the military service member or military spouse's intent to engage in a business or occupation in Texas for which a department issued license is required;]

[(B) proof of the military service member or military spouse's being stationed in Texas and a copy of the military service member or military spouse's military identification card; and]

[(C) documentation demonstrating that the military service member or military spouse is licensed and in good standing in another jurisdiction for the relevant business or occupation.]

[(2) Upon receipt of the notice and documentation required by paragraphs (1)(B) and (1)(C) of this subsection, the department shall:]

[(A) confirm with the other licensing jurisdiction that the military service member or military spouse is currently licensed and in good standing for the relevant business or occupation; and]

[(B) conduct a comparison of the other jurisdiction's license requirements, statutes, and rules with the department's licensing requirements to determine if the requirements are substantially equivalent.]

[(3) If the department confirms that a military service member or military spouse is currently licensed in good standing in another jurisdiction with substantially equivalent licensing requirements, the department shall issue a license to the military service member or military spouse for the relevant business or occupation within 30 days. The license is subject to requirements in Chapter 215 of this title and Occupations Code, Chapter 2301 in the same manner as a license issued under the standard application process, unless modified or exempted under Occupations Code, Chapter 55.]

(i) [(j)] A license holder who timely files a sufficient license renewal application in accordance with subsection (d) of this section may continue to operate under the expired license until the license renewal application is determined in accordance with Government Code §2001.054.

(j) [(k)] A license holder who fails to timely file a sufficient license renewal application in accordance with subsection (d) of this section is not authorized to continue licensed activities after the date the license expires. A license holder may dispute a decision that a license renewal application was not timely or sufficient by submitting evidence to the department demonstrating that the license renewal application was timely and sufficient. Such evidence must be received by the department within 15 days of the date the department issues notice that a timely or sufficient license renewal application was not received by the department.

(k) [(l)] The department shall accept a late license renewal application up to 90 days after the date the license expires. In accordance with subsection (k) of this section, the license holder is not authorized to continue licensed activities after the date the license expires until the department approves the late license renewal application. If the department grants a license renewal under this section, the licensing period begins on the date the department issues the renewed license. The license holder may resume licensed activities upon receipt of the department's written verification or upon receipt of the renewed license.

(l) [(m)] If the department has not received a late license renewal application within 90 days after the date the license expires, the department will close the license. A person must apply for and receive a new license before that person is authorized to resume activities requiring a license.

(m) [(n)] A dealer's standard license plate issued in accordance with Transportation Code, Chapter 503, Subchapter C expires on the date the associated license expires, is canceled, or when a license renewal application is determined, whichever is later.

§215.91. License Processing for Military Service Members, Spouses, and Veterans.

(a) The department will process a license, amendment, or renewal application submitted for licensing of a military service member, military spouse, or military veteran in accordance with Occupations Code, Chapter 55. A license holder who fails to timely file a sufficient renewal application because the license holder was on active duty is exempt from any increased fee or penalty imposed by the department.

(b) A military service member or military spouse may engage in a business or occupation for which a department-issued license is required if the military service member or military spouse meets the requirements of Occupations Code, §55.0041 and this section.

(1) A military service member or military spouse must submit to the department:

(A) a sufficient application as described in §215.83(e) of this title (relating to License Applications, Amendments, or Renewals);

(B) proof of the military service member being stationed in Texas and a copy of the military service member or military spouse's military identification card;

(C) if the applicant is a military spouse, a copy of the military spouse's marriage license; and

(D) a notarized affidavit as required by Occupations Code, § 55.0041(b)(3).

(2) Upon receipt of the application and documentation required by paragraph (1) of this subsection the department shall:

(A) confirm with the other state that the military service member or military spouse is currently licensed and in good standing for the relevant business or occupation; and

(B) conduct a comparison of the other state's license requirements, statutes, and rules with the department's licensing requirements to determine if the requirements are similar in scope of practice; and

(C) issue a provisional license.

(3) If the department confirms that a military service member or military spouse is currently licensed in good standing in another state with licensing requirements that are similar in scope and practice, or was licensed in good standing in Texas in the last five years, the department shall issue a license to the military service member or military spouse for the relevant business or occupation, or notify the applicant why the department is currently unable to issue a license pursuant to Occupations Code, §55.0041(b-1), within 10 days. The license is subject to the requirements of this chapter and Occupations Code, Chapter

2301, and Transportation Code, Chapter 503, in the same manner as a license issued under the standard application process, unless exempted or modified under Occupations Code, Chapter 55.

(c) This section establishes requirements and procedures authorized or required by Occupations Code, Chapter 55, and does not modify or alter rights that may be provided under federal law.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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SUBCHAPTER D. GENERAL DISTINGUISHING NUMBERS AND IN-TRANSIT LICENSES

43 TAC §§215.133, 215.140, 215.141, 215.144, 215.150 - 215.152, 215.155, 215.158, 215.163

STATUTORY AUTHORITY. In addition to the rulemaking authority provided in Section 34 of HB 718, the department adopts amendments and new sections to Chapter 215 under Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution, sale, and lease of motor vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; Occupations Code, §2301.651, which gives the board authority to deny an application for a license, revoke or suspend a license, place on probation, or reprimand a licensee if the applicant or license holder is unfit, makes a material misrepresentation, violates any law relating to the sale, distribution, financing, or insuring of motor vehicles, willfully defrauds a purchaser, or fails to fulfill a written agreement with a retail purchaser of a motor vehicle; Transportation Code, §503.061, which allows the board to adopt rules regulating the issuance and use of dealer's license plates; Transportation Code, §503.0631, which requires the department to adopt rules to implement and manage the department's database of dealer-issued buyer's license plates; Transportation Code, §503.0633, which allows the department to establish the maximum number of license plates or sets of license plates a dealer may obtain annually under Transportation Code, §503.063 and §503.065; Transportation Code, §504.0011, which allows the board to adopt rules to implement and administer Chapter 504; Transportation Code, §520.0071, which requires the board to adopt rules classifying deputies performing titling and registration duties, the duties and obligations of these deputies, the type and amount of bonds that may be required by a county tax assessor-collector for a deputy performing titling and registration duties, and the fees that may be charged or retained by deputies; Transportation Code, §520.021, which allows the department to adopt rules and policies for the maintenance and use of the department's automated registration and titling system; and Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department, as well as the statutes referenced throughout this preamble.

The department also adopts amendments under the authority of Transportation Code, §§501.0041, 502.0021, 503.002, 504.0011, and 520.003; and Government Code, §2001.004 and §2001.054, in addition to the statutory authority referenced throughout this preamble.

Transportation Code, §501.0041 authorizes the department to adopt rules to administer Transportation Code, Chapter 501. Transportation Code, §502.0021 authorizes the department to adopt rules to administer Transportation Code, Chapter 502. Transportation Code, §503.002 authorizes the board to adopt rules for the administration of Transportation Code, Chapter 503. Transportation Code, §504.0011 authorizes the board to adopt rules to implement and administer Chapter 504. Transportation Code, §520.003 authorizes the department to adopt rules to administer Chapter 520.

Government Code, §2001.004 requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures. Government Code, §2001.054 specifies the requirements regarding the grant, denial, renewal, revocation, suspension, annulment, or withdrawal of a license.

CROSS REFERENCE TO STATUTE. These adopted new sections and amendments implement Government Code, Chapter 2001; Occupations Code, Chapters 2301 and 2305; and Transportation Code, Chapters 501 - 504, 520, and 1002.

§215.133. GDN Application Requirements for a Dealer or a Wholesale Motor Vehicle Auction.

(a) No person may engage in business as a dealer or as a wholesale motor vehicle auction unless that person has a valid GDN assigned by the department for each location from which the person engages in business. A dealer must also hold a GDN for a consignment location, unless the consignment location is a wholesale motor vehicle auction.

(b) Subsection (a) of this section does not apply to a person exempt from the requirement to obtain a GDN under Transportation Code §503.024.

(c) A GDN dealer or wholesale motor vehicle auction application must be on a form prescribed by the department and properly completed by the applicant as required under §215.83 of this title (relating to License Applications, Amendments, or Renewals). A GDN dealer or wholesale motor vehicle auction application must include all required information, required supporting documents, and required fees and must be submitted to the department electronically in the licensing system designated by the department. A GDN dealer or wholesale motor vehicle auction GDN holder renewing or amending its GDN must verify current license information, provide related information and documents for any new requirements or changes to the GDN, and pay required fees including any outstanding civil penalties owed the department under a final order. An applicant for a new dealer or wholesale motor vehicle auction GDN must provide the following:

(1) Required information:

(A) type of GDN requested;

(B) business information, including the name, physical and mailing addresses, telephone number, Secretary of State file number (as applicable), and website address, as applicable;

(C) contact name, email address, and telephone number of the person submitting the application;

(D) contact name, email address, and telephone number of a person who can provide information about business operations and the motor vehicle products or services offered;

(E) the name, social security number, date of birth, identity document information, and ownership percentage for each owner, partner, member, or principal if the applicant is not a publicly traded company;

(F) the name, social security number, date of birth, and identity document information for each officer, director, manager, trustee, or other representative authorized to act on behalf of the applicant if the applicant is owned in full or in part by a legal entity;

(G) the name, employer identification number, ownership percentage, and non-profit or publicly traded status for each legal entity that owns the applicant in full or in part;

(H) the name, social security number, date of birth, and identity document information of at least one manager or other bona fide employee who will be present at the established and permanent place of business if the owner is out of state or will not be present during business hours at the established and permanent place of business in Texas;

(I) if a dealer, the name, telephone number, and business email address of the account administrator for the temporary tag database prior to July 1, 2025, or for the license plate system on or after July 1, 2025, designated by the applicant who must be an owner or representative listed in the application;

(J) criminal history record information under the laws of Texas, another state in the United States, the United States, and any foreign jurisdiction for each person listed in the application, including offense description, date, and location;

(K) military service status;

(L) licensing history required to evaluate fitness for licensure under §215.89 of this title (relating to Fitness);

(M) information about the business location and business premises, including whether the applicant will operate as a salvage vehicle dealer at the location;

(N) history of insolvency, including outstanding or unpaid debts, judgments, or liens, unless the debt was discharged under 11 U.S.C. §§101 et seq. (Bankruptcy Act) or is pending resolution under a case filed under the Bankruptcy Act;

(O) signed Certification of Responsibility, which is a form provided by the department; and

(P) if a dealer, whether the applicant repairs a motor vehicle with a catalytic converter in Texas, and if so, the physical address where the repair is performed; and

(Q) any other information required by the department to evaluate the application under current law and board rules.

(2) A legible and accurate electronic image of each applicable required document:

(A) proof of a surety bond if required under §215.137 of this title (relating to Surety Bond);

(B) the certificate of filing, certificate of incorporation, or certificate of registration on file with the Secretary of State, as applicable;

(C) each assumed name certificate on file with the Secretary of State or county clerk;

(D) at least one of the following unexpired identity documents for each natural person listed in the application:

(i) driver license;

(ii) Texas Identification Card issued by the Texas Department of Public Safety under Transportation Code, Chapter 521, Subchapter E;

(iii) license to carry a handgun issued by the Texas Department of Public Safety under Government Code, Chapter 411, Subchapter H;

(iv) passport; or

(v) United States military identification card.

(E) a certificate of occupancy, certificate of compliance, or other official documentation confirming the business location complies with municipal ordinances, including zoning, occupancy, or other requirements for a vehicle business;

(F) documents proving business premises ownership, or lease or sublease agreement for the license period;

(G) business premises photos and a notarized affidavit certifying that all premises requirements in §215.140 of this title (relating to Established and Permanent Place of Business Premises Requirements) are met and will be maintained during the license period;

(H) evidence of franchise if applying for a franchised motor vehicle dealer GDN;

(I) proof of completion of the dealer education and training required under Transportation Code §503.0296, if applicable; and

(J) any other documents required by the department to evaluate the application under current law and board rules.

(3) Required fees:

(A) the fee for each type of license requested as prescribed by law; and

(B) the fee, including applicable taxes, for each dealer's standard plate, and dealer's temporary license plate on or after July 1, 2025, requested by the applicant as prescribed by law.

(d) An applicant for a dealer or wholesale auction GDN must also comply with fingerprint requirements in §211.6 of this title (relating to Fingerprint Requirements for Designated License Types), as applicable.

(e) An applicant for a GDN operating under a name other than the applicant's business name shall use the assumed name under which the applicant is authorized to do business, as filed with the Secretary of State or county clerk, and the assumed name of such legal entity shall be recorded by the applicant on the application using the letters "DBA." The applicant may not use a name or assumed name that may be confused with or is similar to that of a governmental entity or that is otherwise deceptive or misleading to the public.

(f) A wholesale motor vehicle dealer GDN holder may sell or exchange vehicles with licensed or authorized dealers only. A wholesale motor vehicle dealer GDN holder may not sell or exchange vehicles at retail.

(g) An independent mobility motor vehicle dealer shall retain and produce for inspection all records relating to the license requirements under Occupations Code, §2301.002(17-b) and all information and records required under Transportation Code §503.0295.

(h) In evaluating a new or renewal GDN application or an application for a new GDN location, the department may require a site visit to determine if the business location meets the requirements in §215.140. The department will require the applicant or GDN holder to provide a notarized affidavit confirming that all premises requirements are met and will be maintained during the license period.

(i) A person holding an independent motor vehicle dealer GDN does not have to hold a salvage vehicle dealer's license to:

(1) act as a salvage vehicle dealer or rebuilder; or

(2) store or display a motor vehicle as an agent or escrow agent of an insurance company.

(j) A person holding an independent motor vehicle dealer GDN and performing salvage activities under subsection (i) must apply for a National Motor Vehicle Title Information System (NMVTIS) identification number and provide the number to the department in the GDN application.

(k) To be eligible for an independent motor vehicle dealer GDN, a person must complete dealer education and training specified by the department, except as provided in this subsection:

(1) once a person has completed the required dealer education and training, the person will not have to retake the dealer education and training for subsequent GDN renewals, but may be required to provide proof of dealer education and training completion as part of the GDN renewal process;

(2) a person holding an independent motor vehicle dealer GDN for at least 10 years as of September 1, 2019, is exempt from the dealer education and training requirement; and.

(3) a military service member, military spouse, or military veteran will receive appropriate credit for prior training, education, and professional experience and may be exempted from the dealer education and training requirement.

§215.140. Established and Permanent Place of Business Premises Requirements.

(a) A dealer must meet the following requirements at each licensed location and maintain the requirements during the term of the license. If multiple dealers are licensed at a location, each dealer must maintain the following requirements during the entire term of the license.

(1) Business hours for retail dealers.

(A) A retail dealer's office must be open at least four days per week for at least four consecutive hours per day and may not be open solely by appointment.

(B) The retail dealer's business hours for each day of the week must be posted at the main entrance of the retail dealer's office in a manner and location that is accessible to the public. The owner or a bona fide employee of the retail dealer shall be at the retail dealer's licensed location during the posted business hours for the purposes of buying, selling, exchanging, or leasing vehicles. If the owner or a bona fide employee is not available to conduct business during the retail dealer's posted business hours due to special circumstances or emergencies, a separate sign must be posted indicating the date and time the retail dealer will resume operations. Regardless of the retail dealer's business hours, the retail dealer's telephone must be answered from 8:00 a.m. to 5:00 p.m. weekdays by a bona fide employee, owner, answering service, voicemail service, or answering machine. A caller must be able to speak to a natural person or leave a message during these hours.

(2) Business hours for wholesale motor vehicle dealers. A dealer that holds only a wholesale motor vehicle dealer's GDN must post its business hours at the main entrance of the wholesale motor vehicle dealer's office in a manner and location that is accessible to the public. A wholesale motor vehicle dealer or bona fide employee shall be at the wholesale motor vehicle dealer's licensed location at least two weekdays per week for at least two consecutive hours per day. A wholesale motor vehicle dealer may not be open solely by appointment. Regardless of the wholesale motor vehicle dealer's business hours, the wholesale motor vehicle dealer's telephone must be answered from 8:00 a.m. to 5:00 p.m. weekdays by a bona fide employee, owner, answering service, voicemail service, or answering machine. A caller must be able to speak to a natural person or leave a message during these hours.

(3) Business sign requirements for retail dealers.

(A) A retail dealer must display a conspicuous, permanent sign with letters at least six inches in height showing the retail dealer's business name or assumed name substantially similar to the name reflected on the retail dealer's GDN under which the retail dealer conducts business. A business sign is considered conspicuous if it is easily visible to the public within 100 feet of the main entrance of the business office. A business sign is considered permanent only if it is made of durable, weather-resistant material.

(B) The sign must be permanently mounted at the physical address listed on the application for the retail dealer's GDN. A business sign is considered permanently mounted if bolted to an exterior building wall or bolted or welded to a dedicated sign pole or sign support permanently installed in the ground.

(C) A retail dealer may use a temporary sign or banner if that retail dealer can show proof that a sign that meets the requirements of this paragraph has been ordered and provides a written statement that the sign will be promptly and permanently mounted upon delivery.

(D) A retail dealer is responsible for ensuring that the business sign complies with municipal ordinances, and that any lease signage requirements are consistent with the signage requirements in this paragraph.

(4) Business sign requirements for wholesale motor vehicle dealers.

(A) Exterior Sign

(i) A wholesale motor vehicle dealer must display a conspicuous, permanent sign with letters at least six inches in height showing the wholesale motor vehicle dealer's business name or assumed name substantially similar to the name reflected on the wholesale motor vehicle dealer's GDN under which the wholesale motor vehicle dealer conducts business. Effective September 1, 2023, the sign must also include the statement that "Purchasers must be Licensed Dealers" in letters at least three inches in height. A business sign is considered conspicuous if it is easily visible to the public within 100 feet of the main entrance of the business office. A business sign is considered permanent only if it is made of durable, weather-resistant material.

(ii) The sign must be permanently mounted on the business property at the physical address listed on the application. A business sign is considered permanently mounted if bolted to an exterior building wall or bolted or welded to a dedicated sign pole or sign support permanently installed in the ground. A wholesale motor vehicle dealer may use a temporary exterior sign or banner if the wholesale motor vehicle dealer can show proof that a sign that meets the requirements of this paragraph has been ordered and provides a written statement that the sign will be promptly and permanently mounted upon delivery.

(B) Interior Sign

(i) If the wholesale motor vehicle dealer's office is located in an office building with one or more other businesses and an outside sign is not permitted by the property owner, a conspicuous permanent business sign permanently mounted on or beside the main door to the wholesale motor vehicle dealer's office with letters at least two inches in height is acceptable. Effective September 1, 2023, the sign must also include the statement that "Purchasers must be Licensed Dealers" in letters at least one inch in height.

(ii) An interior business sign is considered conspicuous if it is easily visible to the public within 10 feet of the main entrance of the wholesale motor vehicle dealer's office. An interior sign is considered permanent if made from durable material and has lettering that cannot be changed. An interior sign is considered permanently mounted if bolted or otherwise permanently affixed to the main door or nearby wall. A wholesale motor vehicle dealer may use a temporary interior sign or banner if the wholesale motor vehicle dealer can show proof that a sign that meets the requirements of this paragraph has been ordered and provides a written statement that the sign will be promptly and permanently mounted upon delivery.

(C) A wholesale motor vehicle dealer is responsible for ensuring that the business sign complies with municipal ordinances and that any lease signage requirements are consistent with the signage requirements in this paragraph.

(5) Office requirements for a retail dealer and a wholesale motor vehicle dealer.

(A) A dealer's office must be located in a building with a permanent roof and connecting exterior walls on all sides.

(B) A dealer's office must comply with all applicable municipal ordinances, including municipal zoning ordinances. The dealer is responsible for obtaining a certificate of occupancy, certificate of compliance, or other required document issued by a municipal government to show compliance, including a new certificate or document when the building is altered or remodeled, or when the building use changes.

(C) A dealer's office may not be located in a residence, apartment, hotel, motel, rooming house, or any room or building not open to the public.

(D) A dealer's office may not be located in a restaurant, gas station, or convenience store, unless the office has a separate entrance door that does not require a dealer's customer to pass through the other business.

(E) A dealer's office may not be virtual or provided by a subscription for office space or office services. Access to an office space or office services is not considered an established and permanent location.

(F) The physical address of the dealer's office must be in Texas and recognized by the U.S. Postal Service, be capable of receiving U.S. mail, and have an assigned emergency services property address. The department will not mail a dealer's or buyer's license plate to an out-of-state address and will only mail or deliver a license plate to a dealer's physical location.

(G) A portable-type office building may qualify as an office only if the building meets the requirements of this section and is not a readily moveable trailer or other vehicle.

(H) The dealer's office space must:

(i) include at least 100 square feet of interior floor space, exclusive of hallways, closets, or restrooms;

(ii) have a minimum seven-foot-high ceiling;

(iii) accommodate required office equipment; and

(iv) allow a dealer and customer to safely access the office and conduct business in private while seated.

(6) Required office equipment for a retail dealer and a wholesale motor vehicle dealer. At a minimum, a dealer's office must be equipped with:

(A) a desk;

(B) two chairs;

(C) internet access;

(D) a working telephone number listed in the business name or assumed name under which the dealer conducts business; and

(E) a locked and secured room or closet or at least one securely locked, substantially constructed safe or steel cabinet bolted or affixed to the floor or wall in such a way that the safe or steel cabinet cannot be readily removed and of sufficient size to store all dealer's and buyer's license plates in a dealer's possession including [~~both assigned plates for vehicles in inventory and~~] unissued and unassigned buyer's license plates.

(7) Number of retail dealers in one building. Not more than four retail dealers may be located in the same building. Each retail dealer located in the same building must meet the requirements of this section.

(8) Number of wholesale motor vehicle dealers in one office building. Not more than eight wholesale motor vehicle dealers may be located in the same office building. Each wholesale motor vehicle dealer located in the same office building must meet the requirements of this section.

(9) Office sharing prohibition for retail dealers and wholesale motor vehicle dealers. Unless otherwise authorized by the Transportation Code, a retail dealer and a wholesale motor vehicle dealer licensed after September 1, 1999, may not be located in the same building.

(10) Dealer housed with other business.

(A) If a person conducts business as a dealer in conjunction with another business owned by the same person and under the same name as the other business, the same telephone number may be used for both businesses. If the name of the dealer differs from the name of the other business, a separate telephone listing and a separate sign for each business are required.

(B) A person may conduct business as a dealer in conjunction with another business not owned by that person only if the dealer owns the property on which business is conducted or has a separate lease agreement from the owner of that property that meets the requirements of this section. The same telephone number may not be

used by both businesses. The dealer must have separate business signs, telephone listings, and office equipment required under this section.

(C) A dealer's office must have permanent interior walls on all sides and be separate from any public area used by another business.

(11) Display area and storage lot requirements.

(A) A wholesale motor vehicle dealer is not required to have display space at the wholesale motor vehicle dealer's business premises.

(B) A retail dealer must have an area designated as display space for the retail dealer's inventory. A retail dealer's designated display area must comply with the following requirements.

(i) The display area must be located at the retail dealer's physical business address or contiguous to the retail dealer's physical address. The display area may not be in a storage lot.

(ii) The display area must be of sufficient size to display at least five vehicles of the type for which the GDN is issued. The display area must be reserved exclusively for the retail dealer's inventory and may not be used for customer parking, employee parking, general storage, or shared or intermingled with another business or a public parking area, a driveway to the office, or another dealer's display area.

(iii) The display area may not be on a public easement, right-of-way, or driveway unless the governing body having jurisdiction of the easement, right-of-way, or driveway expressly consents in writing to use as a display area. If the easement, right-of-way, or driveway is a part of the state highway system, use as a display area may only be authorized by a lease agreement.

(iv) If a retail dealer shares a display or parking area with another business, including another dealer, the dealer's vehicle inventory must be separated from the other business's display or parking area by a material object or barrier that cannot be readily removed. A barrier that cannot be readily removed is one that cannot be easily moved by one person and typically weighs more than 50 pounds. A material object or barrier must be in place on all sides except for the space necessary to allow for entry and exit of vehicle inventory.

(v) If a dealer's business location includes gasoline pumps or a charging station or includes another business that sells gasoline or has a charging station, the dealer's display area may not be part of the parking area for fuel or charging station customers and may not interfere with access to or from the gasoline pumps, fuel tanks, charging station, or fire prevention equipment.

(vi) The display area must be adequately illuminated if the retail dealer is open at night so that a vehicle for sale can be properly inspected by a potential buyer.

(vii) The display area may be located inside a building; however, if multiple dealers are displaying vehicles inside a building, each dealer's display area must be separated by a material object or barrier that cannot be readily removed. A barrier that cannot be readily removed is one that cannot be easily moved by one person and typically weighs more than 50 pounds. A material object or barrier must be in place on all sides except for the space necessary to allow for entry and exit of vehicle inventory.

(C) A GDN holder may maintain a storage lot only if the storage lot is not accessible to the public and no sales activity occurs at the storage lot. A sign stating the license holder's name, contact information, and the fact the property is a storage lot is permissible. A storage lot must be fenced or in an access-controlled location to be considered not accessible to the public. A GDN holder or applicant must disclose the address of a storage lot or the location of a vehicle in inventory upon request by the department.

(12) Dealers authorized to sell salvage motor vehicles. If an independent motor vehicle dealer offers a salvage motor vehicle for sale on the dealer's premises, the vehicle must be clearly and conspicuously marked with a sign informing a potential buyer that the vehicle is a salvage motor vehicle.

(13) Lease requirements. If the premises from which a dealer conducts business, including any display area, is not owned by the dealer, the dealer must maintain a lease that is continuous during the period of time for which the dealer's license will be issued. The lease agreement must be on a properly executed form containing at a minimum:

(A) the name of the property owner as the lessor of the premises and the name of the dealer as the tenant or lessee of the premises;

(B) the period of time for which the lease is valid;

(C) the street address or legal description of the property, provided that if only a legal description of the property is included, a dealer must attach a statement verifying that the property description in the lease agreement is the physical street address identified on the application as the physical address for the established and permanent place of business;

(D) the signature of the property owner as the lessor and the signature of the dealer as the tenant or lessee; and

(E) if the lease agreement is a sublease in which the property owner is not the lessor, the dealer must also obtain a signed and notarized statement from the property owner including the following information:

(i) property owner's full name, email address, mailing address, and phone number; and

(ii) property owner's statement confirming that the dealer is authorized to sublease the location and may operate a vehicle sales business from the location.

(14) Dealer must display GDN and bond notice. A dealer must display the dealer's GDN issued by the department at all times in a manner that makes the GDN easily readable by the public and in a conspicuous place at each place of business for which the dealer's GDN is issued. A dealer required to obtain a surety bond must post a bond notice adjacent to and in the same manner as the dealer's GDN is displayed. The notice must include the bond company name, bond identification number, and procedure by which a claimant can recover under the bond. The notice must also include the department's website address and notify a consumer that a dealer's surety bond information may be obtained by submitting a request to the department. If the dealer's GDN applies to more than one location, a copy of the GDN and bond notice must be displayed in each supplemental location.

(b) Wholesale motor vehicle auction premises requirements. A wholesale motor vehicle auction must comply with the following premises requirements:

(1) a wholesale motor vehicle auction GDN holder must hold a motor vehicle auction on a regular periodic basis at the licensed location, and an owner or bona fide employee must be available at the business location during each auction and during posted business hours. If the owner or a bona fide employee is not available to conduct business during the posted business hours due to special circumstances or emergencies, a separate sign must be posted indicating the date and time operations will resume.

(2) the business telephone must be answered from 8:00 a.m. to 5:00 p.m. weekdays by a bona fide employee, owner, answering service, voicemail service, or answering machine. A caller must be able to speak to a natural person or leave a message during these hours.

(3) a wholesale motor vehicle auction GDN holder must display a business sign that meets the following requirements:

(A) The sign must be a conspicuous, permanent sign with letters at least six inches in height showing the business name or assumed name substantially similar to the name reflected on the GDN under which the GDN holder conducts business. A business sign is considered conspicuous if it is easily visible to the public within 100 feet of the main entrance of the business office. A business sign is considered permanent only if it is made of durable, weather-resistant material.

(B) The sign must be permanently mounted at the physical address listed on the application for the wholesale motor vehicle auction GDN. A business sign is considered permanently mounted if bolted to an exterior building wall or bolted or welded to a dedicated sign pole or sign support permanently installed in the ground.

(C) An applicant may use a temporary sign or banner if the applicant can show proof that a sign that meets the requirements of this paragraph has been ordered and provides a written statement that the sign will be promptly and permanently mounted upon delivery.

(D) An applicant or holder is responsible for ensuring that the business sign complies with municipal ordinances, and that any lease signage requirements are consistent with the signage requirements in this paragraph.

(4) The business office of a wholesale motor vehicle auction GDN applicant and holder must meet the following requirements:

(A) The office must be located in a building with a permanent roof and connecting exterior walls on all sides.

(B) The office must comply with all applicable municipal ordinances, including municipal zoning ordinances. The wholesale motor vehicle auction is responsible for obtaining a certificate of occupancy, certificate of compliance, or other required document issued by a municipal government to show compliance, including a new certificate or document when the building is altered or remodeled, or when the building use changes.

(C) The office may not be located in a residence, apartment, hotel, motel, rooming house, or any room or building not open to the public.

(D) The office may not be located in a restaurant, gas station, or convenience store, unless the office has a separate entrance door that does not require a customer to pass through the other business.

(E) The office may not be virtual or provided by a subscription for office space or office services. Access to office space or office services is not considered an established and permanent location.

(F) The physical address of the office must be in Texas and recognized by the U.S. Postal Service, capable of receiving U.S. mail, and have an assigned emergency services property address.

(G) A portable-type office building may qualify as an office only if the building meets the requirements of this section and is not a readily moveable trailer or other vehicle.

(5) A wholesale motor vehicle auction GDN applicant and holder must have the following office equipment:

(A) a desk;

(B) a chair;

(C) internet access; and

(D) a working telephone number listed in the business name or assumed name under which business is conducted.

(6) A wholesale motor vehicle auction must meet the following display area and storage lot requirements:

(A) The area designated as display space for inventory must be located at the physical business address or contiguous to the physical address. The display area may not be in a storage lot.

(B) The display area must be of sufficient size to display at least five vehicles. Those spaces must be reserved exclusively for inventory and may not be used for customer parking, employee parking, general storage, or shared or intermingled with another business or a public parking area, or a driveway to the office.

(C) The display area may not be on a public easement, right-of-way, or driveway unless the governing body having jurisdiction of the easement, right-of-way, or driveway expressly consents in writing to use as a display area. If the easement, right-of-way, or driveway is a part of the state highway system, use as a display area may only be authorized by a lease agreement.

(D) If the business location includes gasoline pumps or a charging station or includes another business that sells gasoline or has a charging station, the display area may not be part of the parking area for fuel or charging station customers and may not interfere with access to or from the gasoline pumps, fuel tanks, charging station, or fire prevention equipment.

(E) The display area must be adequately illuminated if open at night so that a vehicle for sale can be properly inspected by a potential buyer.

(F) The display area may be located inside a building.

(G) A wholesale motor vehicle auction may maintain a storage lot only if the storage lot is not accessible to the public and no sales activity occurs at the storage lot. A sign stating the business name, contact information, and the fact the property is a storage lot is permissible. A storage lot must be fenced or in an access-controlled location to be considered not accessible to the public. A GDN holder or applicant must disclose the address of a storage lot or the location of a vehicle in inventory upon request by the department.

(7) A wholesale motor vehicle auction must meet the following lease requirements if the business premises, including any display area, is not owned by the wholesale motor vehicle auction:

(A) the applicant or holder must maintain a lease that is continuous during the period of time for which the GDN will be issued;

(B) The lease agreement must be on a properly executed form containing at a minimum:

(i) the name of the property owner as the lessor of the premises and the name of the GDN applicant or holder as the tenant or lessee of the premises;

(ii) the period of time for which the lease is valid;

(iii) the street address or legal description of the property, provided that if only a legal description of the property is included, a wholesale motor vehicle auction must attach a statement verifying that the property description in the lease agreement is the physical street address identified on the application as the physical address for the established and permanent place of business;

(iv) the signature of the property owner as the lessor and the signature of the applicant or holder as the tenant or lessee; and

(C) if the lease agreement is a sublease in which the property owner is not the lessor, the wholesale motor vehicle auction must also obtain a signed and notarized statement from the property owner including the following information:

(i) property owner's full name, email address, mailing address, and phone number; and

(ii) property owner's statement confirming that the wholesale motor vehicle auction is authorized to sublease the location and may operate a wholesale motor vehicle auction business from the location.

§215.141. Sanctions.

(a) The board or department may take the following actions against a license applicant, a license holder, or a person engaged in business for which a license is required:

(1) deny an application;

(2) revoke a license;

(3) suspend a license;

(4) assess a civil penalty;

(5) issue a cease and desist order; or

(6) or take other authorized action.

(b) The board or department may take action described in subsection (a) of this section if a license applicant, a license holder, or a person engaged in business for which a license is required:

(1) fails to maintain a good and sufficient bond or post the required bond notice if required under Transportation Code §503.033 (relating to Security Requirement);

(2) fails to meet or maintain the requirements of §215.140 of this title (relating to Established and Permanent Place of Business Premises Requirements);

(3) fails to maintain records required under this chapter;

(4) refuses or fails to comply with a request by the department for electronic records or to examine and copy electronic or physical records during the license holder's business hours at the licensed business location:

(A) sales records required to be maintained by §215.144 of this title (relating to Vehicle Records);

(B) ownership papers for a vehicle owned by that dealer or under that dealer's control;

(C) evidence of ownership or a current lease agreement for the property on which the business is located; or

(D) the Certificate of Occupancy, Certificate of Compliance, business license or permit, or other official documentation confirming compliance with county and municipal laws or ordinances for a vehicle business at the licensed physical location.

(5) refuses or fails to timely comply with a request for records made by a representative of the department;

(6) holds a wholesale motor vehicle dealer's license and sells or offers to sell a motor vehicle to a person other than a licensed or authorized dealer;

(7) sells or offers to sell a type of vehicle that the person is not licensed to sell;

(8) fails to submit a license amendment application in the electronic licensing system designated by the department to notify the department of a change of the license holder's physical address, mailing address, telephone number, or email address within 10 days of the change;

(9) fails to submit a license amendment application in the electronic licensing system designated by the department to notify the department of a license holder's name change, or management or ownership change within 10 days of the change;

(10) issues more than one buyer's license plate or buyer's temporary license plate for a vehicle sold on or after July 1, 2025, or more than one temporary tag for a vehicle sold before July 1, 2025, for the purpose of extending the purchaser's operating privileges for more than 60 days;

(11) fails to remove a license plate or registration insignia from a vehicle that is displayed for sale;

(12) misuses a dealer's license plate, or a temporary tag before July 1, 2025;

(13) fails to display a dealer's license plate, or temporary tag before July 1, 2025, as required by law;

(14) holds open a title or fails to take assignment of a certificate of title, manufacturer's certificate, or other basic evidence of ownership for a vehicle acquired by the dealer, or fails to assign the certificate of title, manufacturer's certificate, or other basic evidence of ownership for a vehicle sold;

(15) fails to remain regularly and actively engaged in the business of buying, selling, or exchanging vehicles of the type for which the GDN is issued by the department;

(16) violates a provision of Occupations Code, Chapter 2301; Transportation Code Chapters 503 and 1001-1005; a board order or rule; or a regulation of the department relating to the sale, lease, distribution, financing, or insuring of vehicles, including advertising rules under Subchapter F of this chapter (relating to Advertising);

(17) is convicted of an offense that directly relates to the duties or responsibilities of the occupation in accordance with §211.3 of this title (relating to Criminal Offense Guidelines);

(18) is determined by the board or department, in accordance with §215.89 of this title (relating to Fitness), to be unfit to hold a license;

(19) has not assigned at least five vehicles in the prior 12 months, provided the dealer has been licensed more than 12 months;

(20) files or provides a false or forged:

(A) title document, including an affidavit making application for a certified copy of a title; or

(B) tax document, including a sales tax statement or affidavit;

(21) uses or allows use of that dealer's license or location for the purpose of avoiding a provision of Occupations Code, Chapter 2301; Transportation Code, Chapters 503 and 1001 - 1005; or other laws;

(22) omits information or makes a material misrepresentation in any application or other documentation filed with the department including providing a false or forged identity document or a false or forged photograph, electronic image, or other document;

(23) fails to remit payment as ordered for a civil penalty assessed by the board or department;

(24) sells a new motor vehicle without a franchised dealer's license issued by the department;

(25) fails to comply with a dealer responsibility under §215.150 of this title (relating to Dealer Authorization to Issue License Plates);

(26) on or after July 1, 2025, fails to securely store a license plate or fails to destroy a previously issued but currently unassigned license plate within the time prescribed by statute;

(27) fails to maintain a record of dealer license plates as required under §215.138 of this title (relating to Use of Dealer's License Plates);

(28) on or after July 1, 2025, fails to file or enter a vehicle transfer notice;

(29) fails to enter a lost, stolen, or damaged license plate in the electronic system designated by the department within the time limit prescribed by rule;

(30) violates any state or federal law or regulation relating to the sale of a motor vehicle;

(31) knowingly fails to disclose that a motor vehicle has been repaired, rebuilt, or reconstructed and issued a title under Transportation Code, §501.100 (relating to Application for Regular Certificate of Title for Salvage Vehicle);

(32) fails to issue a refund as ordered by the board or department; or

(33) fails to acquire or maintain a required certificate of occupancy, certificate of compliance, business license or permit, or other official documentation for the licensed location confirming compliance with county or municipal laws or ordinances or other local requirements for a vehicle business;

(34) on or after July 1, 2025, fails to remove a license plate from a vehicle as required by statute or rule [~~sold to an out-of-state buyer or from a vehicle sold for export~~]; or

(35) fails to keep or maintain records required under Occupations Code, Chapter 2305, Subchapter D or to allow an inspection of these records by the department.

§215.144. Vehicle Records.

(a) Purchases and sales records. A dealer and wholesale motor vehicle auction shall maintain a complete record of all vehicle purchases and sales for a minimum period of 48 months and make the record available for inspection and copying by the department during business hours.

(b) Independent mobility motor vehicle dealers. An independent mobility motor vehicle dealer shall keep a complete written record of each vehicle purchase, vehicle sale, and any adaptive work performed on each vehicle for a minimum period of 36 months after the date the adaptive work is performed on the vehicle. An independent mobility motor vehicle dealer shall also retain and produce for inspection all records relating to license requirements under Occupations Code, §2301.002(17-b) and all information and records required under Transportation Code §503.0295.

(c) Location of records. A dealer's record reflecting purchases and sales for the preceding 13 months must be maintained at the dealer's licensed location. Original titles are not required to be kept at the licensed location but must be made available to the agency upon reasonable request. A dealer's record for prior time periods may be kept off-site.

(d) Request for records. Within 15 days of receiving a request from a representative of the department, a dealer shall deliver a copy of the specified records to the address listed in the request. If a dealer has a concern about the origin of a records request, the dealer may verify that request with the department prior to submitting its records.

(e) Content of records. A dealer's complete record for each vehicle purchase or vehicle sale must contain:

(1) the date of the purchase;

(2) the date of the sale;

(3) the VIN;

(4) the name and address of the person selling the vehicle to the dealer;

(5) the name and address of the person purchasing the vehicle from the dealer;

(6) the name and address of the consignor if the vehicle is offered for sale by consignment;

(7) except for a purchase or sale where the Tax Code does not require payment of motor vehicle sales tax, a county tax assessor-collector receipt marked paid;

(8) a copy of all documents, forms, and agreements applicable to a particular sale, including a copy of:

(A) the title application;

(B) the work-up sheet;

(C) the front and back of the manufacturer's certificate of origin or manufacturer's statement of origin, unless the dealer obtains the title through webDEALER as defined in §217.71 of this title (relating to Automated and Web-Based Vehicle Registration and Title Systems);

(D) the front and back of the title for the purchase and the sale, unless the dealer enters or obtains the title through webDEALER as defined in §217.71 of this title;

(E) the factory invoice, if applicable;

(F) the sales contract;

(G) the retail installment agreement;

(H) the buyer's order;

(I) the bill of sale;

(J) any waiver;

(K) any other agreement between the seller and purchaser;

(L) the purchaser's photo identification;

(M) the odometer disclosure statement signed by the buyer, unless the vehicle is exempt; and

(N) the rebuilt salvage disclosure, if applicable.

(9) the original manufacturer's certificate of origin, original manufacturer's statement of origin, or original title for a motor vehicle offered for sale by a dealer which must be properly stamped if the title transaction is entered into webDEALER as defined in §217.71 of this title by the dealer;

(10) the dealer's monthly Motor Vehicle Seller Financed Sales Returns, if any; and

(11) if the vehicle sold is a motor home or a towable recreational vehicle subject to inspection under Transportation Code, Chapter 548, a copy of the written notice provided to the buyer at the time of the sale, notifying the buyer that the vehicle is subject to inspection requirements.

(f) Title assignments.

(1) For each vehicle a dealer acquires or offers for sale, the dealer must properly take assignment in the dealer's name of any:

(A) title;

(B) manufacturer's statement of origin;

(C) manufacturer's certificate of origin; or

(D) other evidence of ownership.

(2) Unless not required by Transportation Code, §501.0234(b), a dealer must apply in the name of the purchaser of a vehicle for the title and registration, as applicable, of the vehicle with a county tax assessor-collector.

(3) To comply with Transportation Code, §501.0234(f), a title or registration is considered filed within a reasonable time if filed within:

(A) 30 days of the vehicle sale date; or

(B) 45 days of the vehicle sale date for a dealer-financed transaction; or

(C) 60 days of the vehicle sale date for a vehicle purchased by a member or reserve member of the United States armed forces, Texas National Guard, or National Guard of another state serving on active duty.

(4) The dealer is required to provide to the purchaser the receipt for the title and registration application.

(5) The dealer is required to maintain a copy of the receipt for the title and registration application in the dealer's sales file.

(g) Out-of-state sales. For a sale involving a vehicle to be transferred out of state, the dealer must:

(1) within 30 days of the date of sale, either file the application for certificate of title on behalf of the purchaser or deliver the properly assigned evidence of ownership to the purchaser; and

(2) maintain in the dealer's record at the dealer's licensed location a photocopy of the completed sales tax exemption form for out of state sales approved by the Texas Comptroller of Public Accounts.

(h) Consignment sales. A dealer offering a vehicle for sale by consignment must have a written consignment agreement or a power of attorney for the vehicle, and shall, after the sale of the vehicle, take assignment of the vehicle in the dealer's name and, pursuant to subsection (f), apply in the name of the purchaser for transfer of title and registration, if the vehicle is to be registered, with a county tax assessor-collector. The dealer must, for a minimum of 48 months, maintain a record of each vehicle offered for sale by consignment, including the VIN and the name of the owner of the vehicle offered for sale by consignment.

(i) Public motor vehicle auctions.

(1) A GDN holder that acts as a public motor vehicle auction must comply with subsection (h) of this section.

(2) A GDN holder that acts as a public motor vehicle auction:

(A) is not required to take assignment of title of a vehicle before offering the vehicle [~~it offers~~] for sale at auction;

(B) must take assignment of title of a vehicle from a consignor prior to making application for title on behalf of the buyer; and

(C) must make application for title on behalf of the purchaser and remit motor vehicle sales tax within a reasonable time as defined in subsection (f) of this section.

(3) A GDN holder may not sell another GDN holder's vehicle at a public motor vehicle auction.

(j) Wholesale motor vehicle auction records. A wholesale motor vehicle auction license holder shall maintain, for a minimum of 48 months, a complete record of each vehicle purchase and sale occurring through the wholesale motor vehicle auction. The wholesale motor vehicle auction license holder shall make the record available for inspection and copying by the department during business hours.

(1) A wholesale motor vehicle auction license holder shall maintain at the licensed location a record reflecting each purchase and sale for at least the preceding 24 months. Records for prior time periods may be kept off-site.

(2) Within 15 days of receiving a department request, a wholesale motor vehicle auction license holder shall deliver a copy of the specified records to the address listed in the request.

(3) A wholesale motor vehicle auction license holder's complete record of each vehicle purchase and sale must, at a minimum, contain:

(A) the date of sale;

(B) the VIN;

(C) the name and address of the person selling the vehicle;

(D) the name and address of the person purchasing the vehicle;

(E) the dealer's license number of both the selling dealer and the purchasing dealer, unless either is exempt from holding a license;

(F) all information necessary to comply with the federal odometer disclosure requirements in 49 CFR Part 580;

(G) auction access documents, including the written authorization and revocation of authorization for an agent or employee, in accordance with §215.148 of this title (relating to Dealer Agents);

(H) invoices, bills of sale, checks, drafts, or other documents that identify the vehicle, the parties, or the purchase price;

(I) any information regarding the prior status of the vehicle such as the Reacquired Vehicle Disclosure Statement or other lemon law disclosures; and

(J) a copy of any written authorization allowing an agent of a dealer to enter the auction.

(k) Electronic records. A license holder may maintain a record in an electronic format if the license holder can print the record at the licensed location upon request by the department, except as provided by subsection (l) of this section.

(l) Use of department electronic titling and registration systems:

(1) webDEALER. A license holder utilizing the department's web-based title application known as webDEALER, as defined in §217.71 of this title (relating to Automated and Web-Based Vehicle Registration and Title Systems), shall comply with §217.74 of this title (relating to Access to and Use of webDEALER). Original hard copy titles are not required to be kept at the licensed location but must be made available to the department upon request.

(2) License Plate System. A license holder must comply with §215.151 of this title (relating to Buyer's License Plates General Use Requirements) regarding requirements to enter information into the department-designated electronic system for license plates.

§215.150. Dealer Authorization to Issue License Plates.

(a) A dealer that holds a GDN must issue a buyer's license plate for a vehicle type the dealer is authorized to sell to:

(1) a buyer of a new vehicle to be titled and registered in Texas, unless the buyer has a general issue license plate or a specialty, personalized, or other qualifying license plate eligible to be assigned to the vehicle with approval of the department; or

(2) a buyer of a used vehicle to be titled and registered in Texas if [~~a buyer's license plate did not come with the vehicle and~~] the buyer does not have a general issue license plate or a specialty, personalized, or other qualifying license plate eligible to be assigned to the vehicle with approval of the department.

(b) Notwithstanding subsection (a), a dealer that holds a GDN is not required to issue a buyer's license plate to a vehicle sold to a commercial fleet buyer authorized as a Dealer Deputy under §217.166 of the title (relating to Dealer Deputies).

(c) A dealer that holds a GDN must issue a buyer's temporary license plate to an out-of-state buyer for a vehicle that is to be registered in accordance with the laws of the buyer's state of residence.

(d) A dealer may issue a license plate under Transportation Code §503.063 until:

(1) the department denies access to the license plate system under Transportation Code §503.0633(f) and §224.58 of this title (relating to Denial of Dealer Access to License Plate System);

(2) the dealer issues the maximum number of license plates authorized under Transportation Code, §503.0633(a) - (d); or

(3) the GDN is closed, canceled, revoked, or suspended.

(e) A governmental agency that is exempt under Transportation Code, §503.024 from the requirement to obtain a dealer general distinguishing number may issue a buyer's license plate or a buyer's temporary license plate to the buyer of a vehicle owned by the governmental agency unless the buyer has a general issue license plate or a specialty, personalized, or other qualifying license plate that is eligible to be assigned to the vehicle with approval of the department. A governmental agency that issues a buyer's license plate or buyer's temporary license plate under this subsection:

(1) is subject to the provisions of Transportation Code §503.0631 and §503.0671 applicable to a dealer; and

(2) is not required to charge the registration fee authorized under Transportation Code §503.063(g) and specified in §215.155(g) of this title (relating to Buyer's License Plates).

(f) A dealer is responsible for all use of and access to all license plates in the dealer's possession and the license plate system under the dealer's account, including access by any user or unauthorized person. Dealer duties include monitoring license plate storage and issuance, managing account access, and taking timely and appropriate actions to maintain license plate and system security, including:

(1) establishing and following reasonable password policies, including preventing the sharing of passwords;

(2) limiting authorized users to owners and bona fide employees with a business need to access license plates and the license plate system;

(3) removing users who no longer have a legitimate business need to access the system;

(4) securing all license plates, including [~~license plates assigned to vehicles in inventory,~~] dealer's license plates[~~,~~] and unissued or unassigned buyer's license plates, by storing license plates in a locked and secured room or closet or one or more securely locked, substantially constructed safes or steel cabinets bolted or affixed to the floor or wall of sufficient size to store all dealer and buyer's license plates in a dealer's possession, and by promptly marking and destroying, recycling, or returning void license plates as required under §215.158 of this title (relating to General Requirements for Buyer's License Plates; and

(5) securing equipment used to access the license plate system.

§215.151. License Plate General Use Requirements.

(a) If a buyer purchases a vehicle to be registered in Texas, a dealer must secure, or a government agency may secure, a license plate to the vehicle in accordance with §217.27 of this title (relating to Vehicle Registration Insignia) and update the license plate system accordingly.

(1) A dealer must secure, or a governmental agency may secure, a buyer-provided license plate on the purchased vehicle if a buyer provides a general issue, or specialty, personalized, or other qualifying license plate that is eligible to be assigned to the vehicle with approval of the department and update the license plate system accordingly.

(2) A dealer must issue a buyer's license plate to the buyer if a buyer purchases a new vehicle from a dealer and the buyer does not have a general issue, specialty, personalized, or other qualifying license plate to transfer to the vehicle.

(3) A dealer must issue, or a governmental agency may issue, a buyer's license plate to a buyer purchasing a used vehicle if [~~the vehicle does not have an assigned license plate in the license plate system or the assigned license plate is missing or damaged and~~] the buyer does not have a general issue, specialty, personalized, or other qualifying license plate to transfer to the vehicle.

(b) If a non-resident buyer purchases a vehicle to be titled and registered in accordance with the laws of the buyer's state of residence, a dealer must issue, or a governmental agency may issue, a buyer's temporary license plate and secure the temporary license plate to the rear of a vehicle in accordance with §217.27 of this title and update the license plate system accordingly.

(c) If [~~a vehicle has an assigned license plate and~~] the buyer provides a general issue, specialty, personalized, or other qualifying license plate to transfer to the vehicle, a dealer must update the license plate status in the license plate system, remove any previously assigned general issue [~~mark the~~] license plate and reassign that license plate to a vehicle of the same class within ten days, before marking as void and destroy, recycle, or return the license plate as required in §215.158 of the title (relating to General Requirements for Buyer's License Plates).

(d) A dealer, including a wholesale dealer, must remove a buyer's license plate from a purchased vehicle and store the license plate in a secure location in accordance with §215.150(f) of this title (relating to Dealer Authorization to Issue License Plates). [~~Upon vehicle sale,~~] The [~~the~~] dealer must update the license plate database and may:

(1) reassign the [~~provide the assigned~~] license plate to a vehicle of the same class within 10 days if purchased by a Texas retail buyer [~~that purchases the vehicle~~]; or

(2) [~~if the vehicle is sold to a Texas dealer, securely transfer the assigned license plate to the purchasing dealer; or~~]

[~~(3)~~] [~~if the vehicle is sold to an out-of-state buyer or for export,~~] mark the license plate as void and destroy, recycle, or return the license plate as required in §215.158 of this title.

(e) Notwithstanding subsection (a) or subsection (b) of this section, a dealer is not required to secure an assigned buyer's license plate to a lawfully purchased vehicle in the following circumstances:

(1) when a retail buyer purchases a vehicle for direct delivery to the buyer and the buyer authorizes the dealer in writing to mail or securely deliver the assigned license plate to the buyer; or

(2) when a retail buyer purchases a vehicle to be converted and authorizes the dealer in writing to mail or securely deliver the assigned license plate to a licensed converter who will affix the license plate to the completed vehicle prior to delivery to the buyer.

§215.152. Obtaining Dealer-Issued Buyer's License Plates.

(a) A dealer or governmental agency is required to have internet access to connect to webDEALER and the license plate system maintained by the department and is responsible for verifying receipt of license plates in the license plate system.

(b) Except as provided by §215.157 of this title (relating to Issuing Buyer's License Plates and License Plate Receipts When Internet Not Available) before a license plate may be issued or secured on a vehicle, a dealer or governmental agency must enter in the license plate system true and accurate information about:

(1) the vehicle;

(2) the buyer; and

(3) the license plate number issued or assigned to the vehicle.

(c) The department will inform each dealer annually of the maximum number of new buyer's license plates the dealer is authorized to obtain during the calendar year under Transportation Code, §503.063, including:

(1) an allotment of [~~unassigned~~] buyer's license plates to be issued to a buyer of a vehicle that is to be titled and registered in Texas, and

(2) a separate allotment of buyer's temporary license plates to be issued to a non-resident buyer for a vehicle that will be registered and titled in another state.

(d) The department will calculate a dealer's maximum annual allotment of new [~~unassigned~~] buyer's license plates and buyer's temporary license plates based on the following formula:

(1) Vehicle title transfers, sales, or license plate issuance data determined from the department's systems from the previous fiscal year;

(2) the total value of paragraph (1) of this subsection will be increased by a multiplier based on the dealer's time in operation giving a 10 percent increase for each year the dealer has been in operation up to 10 years; and

(3) the total value of paragraph (2) of this subsection will be increased by a multiplier that is the greater of:

(A) the dealer's actual growth rate percentage identified from the preceding two fiscal years, calculated by the growth of the number of in-state or out-of-state sales transactions processed through the department-designated registration and title system or license plate system, except that it may not exceed 200 percent; or

(B) the statewide actual growth rate percentage identified from the preceding two fiscal years, calculated by the growth of the number of relevant transactions processed through the department-designated registration and title system or license plate system, not less than zero, to determine the dealer's annual allotment; and

(4) the department may increase or decrease the annual allotment for dealers in the state, in a geographic or population area, or in a county, based on:

(A) changes in the market;

(B) temporary conditions that may affect sales; and

(C) any other information the department considers relevant.

(e) A dealer licensed after the commencement of a calendar year shall be allocated the number of buyer's license plates and buyer's temporary plates allocated in this subsection prorated on all or part of the remaining months until the commencement of the calendar year after the dealer's initial license expires. The initial allocations shall be as determined by the department in granting the license, but not more than:

(1) 200 buyer's license plates and 100 buyer's temporary license plates for a franchised dealer unless the dealer provides credible information indicating that a greater number of buyer's license plates is warranted based on anticipated sales, and growth, to include new and used vehicle sales, including information from the manufacturer or distributor, or as otherwise provided in this section.

(2) 100 buyer's license plates and 48 buyer's temporary license plates for a nonfranchised dealer unless the dealer provides credible information indicating that a greater number of license plates is warranted based on anticipated sales as otherwise provided in this section.

(f) An existing dealer that is:

(1) moving its operations from one location to a different location will continue with its allotment of buyer's license plates and buyer's temporary license plates and not be allocated license plates under subsection (e) of this section;

(2) opening an additional location will receive a maximum allotment of buyer's license plates and buyer's temporary license plates based on the greater of the allotment provided to existing locations, including franchised dealers opening additional locations for different line makes, or the amount under subsection (e) of this section;

(3) purchased as a buy-sell ownership agreement will receive the maximum allotment of buyer's license plates and buyer's temporary license plates provided to the location being purchased and not be allocated license plates under subsection (e) of this section; and

(4) inherited by will or laws of descent will receive the maximum allotment of buyer's license plates and buyer's temporary license plates provided to the location being inherited and not be allocated license plates under subsection (e) of this section.

(g) A new dealer may also provide credible information supporting a request for additional or fewer buyer's license plates and buyer's temporary license plates to the amount allocated under subsection (e) of this section based on:

(1) franchised dealer, manufacturer, or distributor sales expectations;

(2) a change in GDN required by death or retirement, except as provided in subsection (f) of this section;

(3) prior year's sales by a dealer moving into the state; or

(4) other similar change of location or ownership that indicates some continuity in existing operations.

(h) The annual allotment of buyer's issue license plates and buyer's temporary license plates will each be divided by four and allocated to a dealer on a quarterly basis, unless a dealer sells only antique or special interest vehicles as defined by Transportation Code, §683.077(b), in which case each allocation may be divided by two and allocated on a half-yearly basis. A dealer's remaining unissued license plates at the end of the allocation period will count towards the dealer's next allotment.

(i) A dealer is not eligible to receive a quarterly allocation in the following circumstances:

(1) the dealer's license has been closed, canceled, or revoked in a final order;

(2) the department has issued a notice of department decision under §224.56 of this title (relating to Notice of Department Decision), alleging that the dealer is in violation of §215.140 of this title (relating to Established and Permanent Place of Business Premises Requirements) and appears to have abandoned the licensed location;

(3) the department has denied the dealer access to the temporary tag system or the license plate system in accordance with §224.58 of this title (relating to Denial of Dealer Access to License Plate System) and Transportation Code, §503.0633(f);

(4) a dealer fails a compliance review performed by the department under Transportation Code, §503.063(d);

(5) the dealer license expires during that quarter and the dealer has not submitted a license renewal application to the department;

(6) a dealer does not have an owner or bona fide employee at the licensed location during posted business hours to accept a license plate delivery; or

(7) a dealer fails to keep license plates or the license plate system secure.

(j) A dealer with an active license and access to the license plate database who is ineligible to receive a quarterly allocation under subsection (i) of this section may request the department conduct a compliance review under Transportation Code, §503.063(d) to determine if the dealer is eligible to receive a future allocation by submitting a request to DealerCompliance@txdmv.gov. The department will conduct the compliance review within 14 days of the dealer's request.

(k) A dealer who has an active license but is not eligible to receive a quarterly allocation under subsection (i) of this section may obtain buyer's license plates from a county tax assessor-collector or department regional service center, as directed by the department.

(l) [~~(i)~~] A dealer may request more buyer's license plates or buyer's temporary license plates:

(1) after using 50 percent of the quarterly allocation of general issue plates or buyer temporary plates, a dealer may request an advance on the next quarter's allotment; or

(2) after using 50 percent of the allotted annual maximum number of general issue plates or buyer temporary plates a dealer may request an increase in the annual allotted number of license plates.

(m) A dealer may request fewer buyer's license plates or buyer's temporary license plates:

(1) after using less than 50 percent of the quarterly allocation of general issue license plates or buyer temporary license plates in a quarter; or

(2) after using less than 50 percent of the allotted annual maximum number of general issue license plates or buyer temporary license plates in a year.

(n) [~~(j)~~] To receive more buyer's license plates or buyer's temporary license plates or to request a decrease in a quarterly or annual allocation [~~under subsection (i)~~], a dealer must submit a request in the department's designated license plate system.

(o) [~~(k)~~] A dealer requesting an increase or decrease in the maximum annual allotment of buyer's license plates or buyer's temporary license plates must provide information demonstrating the need for additional license plates results from business operations, including anticipated needs, as required by Transportation Code, §503.0633(c). Information may include documentation of sales and tax reports filed as required by law, information of anticipated need, or other information of the factors listed in Transportation Code, §503.0633(b).

(1) The department shall consider the information presented and may consider information not presented that may weigh for or against granting the request that the department in its sole discretion determines to be relevant in making its determination. Other relevant information may include information of the factors listed in Transportation Code, §503.0633(b), the timing of the request, and the requestor's license plate activity.

(2) The department may allocate a lesser or greater number of [~~additional~~] license plates than the amount requested. Allocation of a lesser or greater number of [~~additional~~] license plates is not a denial of the request. Allocation of [~~additional~~] license plates under this paragraph does not limit the dealer's ability to submit additional requests [~~for more license plates~~].

(3) If a request is denied, the denial will be sent to the dealer by email to the requestor's email address.

(A) A dealer may appeal the denial to the designated director in the Vehicle Titles and Registration Division.

(B) The appeal must be requested though the designated license plate system within 15 days of the date the department emailed the denial to the dealer.

(C) The appeal may discuss information provided in the request but may not include additional information.

(D) The designated director in the Vehicle Titles and Registration Division will review the appeal and any additional statements concerning the information submitted in the original request and render an opinion within 15 days of receiving the appeal. The designated director in the Vehicle Titles and Registration Division may decide to deny the appeal [~~and issue no additional license plates~~] or award an amount of [~~additional~~] license plates that is lesser, equal to, or greater than the request.

(E) The requesting dealer will be notified as follows:

(i) If the designated director in the Vehicle Titles and Registration Division decides to deny the appeal, the department will contact the requesting dealer by email regarding the decision and options to submit a new request with additional relevant credible supporting documentation or to pursue a claim in district court; or

(ii) If the designated director in the Vehicle Titles and Registration Division awards an amount of [~~additional~~] license plates that is lesser, equal to, or greater than the request, the [~~additional license plates will be added to the~~] dealer's allocation will be adjusted and the dealer will be contacted by email regarding the decision, informed that the request has not been denied, and informed about options to submit a new request.

(4) The designated director in the Vehicle Titles and Registration Division's decision on appeal is final.

(5) Once a denial is final, a dealer may only submit a subsequent request [~~for additional license plates~~] during that calendar year if the dealer is able to provide additional information not considered in a prior request.

(p) [~~(l)~~] A change in the allotment under subsection (i) of this section does not create a dealer base for subsequent year calculations.

(q) [~~(m)~~] The department may at any time initiate an enforcement action against a dealer if license plate system activity suggests that misuse or fraud has occurred as described in Transportation Code §503.0633(f) or §503.0671.

§215.155. Buyer's License Plates.

(a) A dealer may issue and secure a buyer's license plate or a buyer's temporary license plate only on a vehicle:

(1) from the selling dealer's inventory; and

(2) that can be legally operated on the public streets and highways; and

(3) for which a sale or lease has been consummated; and

(4) that has a valid inspection in accordance with Transportation Code Chapter 548, unless:

(A) an inspection is not required under Transportation Code §503.063(i) or (j); or

(B) the vehicle is exempt from inspection under Chapter 548.

(b) A dealer may not issue a buyer's general issue or temporary license plate to the buyer of a vehicle that is to be titled but not registered.

(c) For a wholesale transaction,[~~:~~]

[~~(1)~~] a dealer may not issue a buyer's license plate; rather the purchasing dealer places on the motor vehicle its own:

(1) [~~(A)~~] dealer's temporary license plate; or

(2) [~~(B)~~] dealer's standard or personalized prestige license plate.

[~~(2) if a general issue plate is assigned to a vehicle, the selling dealer must provide the license plate to the purchasing dealer for placement on the vehicle at time of retail sale.~~]

(d) A buyer's temporary license plate is valid until the earlier of:

(1) the date on which the vehicle is registered; or

(2) the 60th day after the date of purchase.

(e) A dealer shall charge a buyer a fee of $10, unless the vehicle is exempt from payment of registration fees under Transportation Code, §502.453 or §502.456. A dealer shall remit the fee to the county with the title transfer application for deposit to the credit of the Texas Department of Motor Vehicles fund. If the vehicle is sold by a dealer to an out-of-state resident:

(1) the dealer shall remit the entire fee to the department for deposit to the credit of the Texas Department of Motor Vehicles fund if payment is made through the department's designated electronic system; or

(2) the dealer shall remit the fee to the county for deposit to the credit of the Texas Department of Motor Vehicles fund.

(f) A governmental agency may charge a buyer a fee of $10 unless the vehicle is exempt from payment of registration fees under Transportation Code, §502.453 or §502.456. If collected by a governmental agency, the fee must be sent to the county for deposit to the credit of the Texas Department of Motor Vehicles fund.

§215.158. General Requirements for Buyer's License Plates.

(a) A dealer or governmental agency is responsible for the safekeeping of all license plates in the dealer's or governmental agency's possession consistent with the requirements in §215.150 of this title (relating to Dealer Authorization to Issue License Plates). A dealer or governmental agency shall report any loss, theft, or destruction of a buyer's license plate or buyer's temporary license plate to the department in the system designated by the department within 24 hours of discovering the loss, theft, or destruction.

(b) When a dealer is required to [~~remove and~~] void a previously assigned buyer's license plate or other type of license plate from a vehicle [~~sold to an out-of-state buyer or for another reason allowed by rule~~], the dealer shall render a void plate unusable by permanently marking the front of the plate with the word "VOID" or a large "X"; and within 10 days:

(1) destroy the license plate; or

(2) recycle the license plate using a metal recycler registered under Occupations Code, Chapter 1956; or

(3) return the license plate to the department or county tax assessor-collector.

(c) A dealer or governmental agency must return all license plates in the dealer's possession to the department within 10 days of closing the associated license or within 10 days of the associated license being revoked, canceled, or closed by the department.

§215.163. License Plate Disposition for Motor Vehicles Sold at Auction or on Consignment.

(a) Wholesale motor vehicle auctions. A wholesale motor vehicle auction GDN holder who receives a consignment and delivery of a motor vehicle from a person who is not a GDN holder for the purpose of sale at auction shall:

(1) remove and mark any license plate as void; and

(2) destroy, recycle, or return any license plate as required in §215.158 of this title (relating to General Requirements for Buyer's License Plates).

(b) Public auctions.

(1) Before offering a consigned vehicle for sale at a public auction, a dealer must remove any license plate and return the license plate to the vehicle's owner or destroy, recycle, or return the license plate in accordance with §215.158 of this title.

(2) If the purchaser at a public auction is a Texas retail buyer, a dealer shall issue a buyer's license plate to the purchaser, unless the buyer has a general issue, specialty, personalized, or other qualifying license plate to transfer, and update the license plate database in accordance with §215.151 of this title (relating to License Plate General Use Requirements).

(3) If the purchaser at the public auction is a dealer, export buyer, or out-of-state buyer, the selling dealer shall not issue a buyer's license plate.

(4) Notwithstanding §215.150(c) of this title (relating to Dealer Authorization to Issue License Plates), if the purchaser at a public auction is an out-of-state buyer, the dealer shall issue a buyer's temporary license plate only if the purchaser requires this license plate to transport the vehicle to another state in which the vehicle will be titled and registered in accordance with the laws of that state.

(c) Other consignment sales.

(1) Before offering for sale a consigned motor vehicle with a license plate owned by a person who is not a GDN holder, the dealer shall remove and return the license plate to the vehicle's owner. The dealer to whom the vehicle is consigned may use its dealer's temporary license plate to demonstrate the consigned motor vehicle to a potential purchaser.

(2) Upon the sale of a consigned motor vehicle owned by a person who is not a GDN holder:

(A) a dealer shall issue a buyer's license plate to a Texas retail buyer who purchases the consigned vehicle, unless the buyer has a general issue, specialty, personalized, or other qualifying license plate to transfer, and update the license plate database in accordance with §215.151 of this title;

(B) a dealer shall not issue a buyer's license plate If the purchaser of the consigned vehicle is a dealer, export buyer, or out-of-state buyer; and

(C) notwithstanding §215.150(c) of this title, if the purchaser of a consigned vehicle is an out-of-state buyer, the dealer shall issue a buyer's temporary license plate only if the purchaser requires this license plate to transport the vehicle to another state in which the vehicle will be titled and registered in accordance with the laws of that state.

(3) An independent motor vehicle dealer who receives consignment and delivery of a salvage vehicle or total loss vehicle (as defined by the applicable insurance contract) for sale from a person who is not a GDN holder shall remove any license plate and destroy, recycle, or return the license plate as required in §215.158 of this title.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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CHAPTER 217. VEHICLE TITLES AND REGISTRATION

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code (TAC) Subchapter B, Motor Vehicle Registration, §§217.27, 217.52, and 217.53; and Subchapter I, Processing and Handling Fees, §217.185.

The proposed amendments are necessary to implement legislation, to clarify rule language, and to remove a fee discount that is no longer necessary to incentivize online registration transactions.

EXPLANATION.

Proposed amendments to §217.27(c)(2)(B) would delete references to Transportation Code, §548.102, the language pertaining to an outstanding inspection period, and the language regarding an application for registration in the name of the purchaser. Proposed amendments would also insert reference to Transportation Code, §502.044(a-1) for the authority to register certain motor vehicles for a period of 24 consecutive months. These proposed amendments are necessary to implement Senate Bill (SB) 1729, 89th Legislature, Regular Session (2025), which amended Transportation Code, §502.044 to designate a motor vehicle registration period of 24 consecutive months for new passenger cars and light trucks sold in Texas or purchased by a commercial fleet buyer described by Transportation Code, §501.0234(b)(4) for use in Texas. The proposed amendments to §217.27(c)(2)(B) are also necessary to delete references to Transportation Code, §548.102 because House Bill (HB) 3297, 88th Legislature, Regular Session (2023) repealed Transportation Code, §548.102, pertaining to the initial two-year inspection period for passenger cars and light trucks.

Proposed amendments to §217.52(n)(1)(B) would clarify that the fee for restyling a multi-year vendor specialty license plate to an embossed license plate is $75, regardless of whether the specialty license plate from which the person is restyling was embossed or non-embossed. This reflects the higher costs of the embossing process on the new plate, which the department's vendor incurs regardless of whether the original plate that the person is seeking to replace was embossed. When current §217.52(n)(1)(B) was originally adopted, embossed plates were new and all restyling to an embossed plate was from a non-embossed plate. As embossed plates become more prevalent, this proposed clarification of the rule is necessary to prevent confusion and accurately reflect the fee for the restyling of an embossed plate to a new style of embossed plate.

Proposed amendments to §217.53 are necessary to implement SB 1902, 89th Legislature, Regular Session (2025), which amended Transportation Code, §504.901 to require a motor vehicle dealer who has purchased a vehicle to remove the assigned general-issue license plates from the vehicle and either transfer the license plates within 10 days to another motor vehicle purchased from their inventory, or destroy the plates. Proposed amendments to §217.53(a) would modify the language to require a dealer, upon receiving a motor vehicle in their inventory by sale or transfer, to remove the plates and remove and dispose of the registration insignia from the vehicle. A proposed amendment to §217.53(a) would also clarify that the dealer must either transfer or dispose of the general-issue license plates removed from the motor vehicle in accordance with 43 TAC §215.151(d), relating to License Plate General Use Requirements. In addition, a proposed amendment would add

standard language to state that §215.151(d) is contained in Title 43.

SB 1902 amended Transportation Code, §504.901(b) to require a seller in a transaction where neither party holds a general distinguishing number (GDN) to remove the license plates from the vehicle, and to permit the seller to transfer the removed license plates to another vehicle titled in the seller's name. Proposed amendments to §217.53(b) would implement SB 1902 by deleting the requirement for general issue license plates to remain with a motor vehicle following the sale or transfer of the motor vehicle where neither party in the transaction is a dealer, and replacing it with language requiring the seller or transferor to remove license plates from the motor vehicle. The proposed amendments to §217.53(b) would implement SB 1902 by giving sellers the option of transferring the license plates to a motor vehicle titled in their name as long as the motor vehicle is of the same classification as the motor vehicle the license plates were removed from, and upon acceptance of a request made to a county tax assessor-collector through an application filed under Transportation Code, §501.023 or §502.040.

Proposed amendments to §217.53(c) would implement SB 1902 by requiring that the seller of the vehicle render unusable and dispose of any license plates that are not transferred to another vehicle. An additional amendment to §217.53(c) would create consistency and clarity across the department's rules by replacing a vague description of acceptable plate destruction with specific allowable methods for destroying or disposing of license plates, paralleling the requirements for dealers under §215.158(b) of this title, relating to General Requirements for Buyer's License Plates.

The language in Transportation Code, §504.901(b), as amended by SB 1902, that requires the seller of a motor vehicle, in a transaction where neither party is a dealer, to remove the license plates from the vehicle, is very similar to the language that existed in that statue prior to the amendments of HB 718, 88th Legislative Session (2023). Proposed amendments to §217.53(d) would implement SB 1902 by reverting back to a portion of the language that existed in §217.53(c) prior to the amendments that the department adopted in December 2024 to implement HB 718. The proposed amendments to §217.53(d) would inform a purchaser of a motor vehicle, where neither party is a dealer and the seller has removed the license plates, of the option to secure a vehicle transit permit under Transportation Code, §502.492. This permit would allow the purchaser to operate the motor vehicle legally on the public roadways from the location where they purchased it to their home or to get it titled and registered.

A proposed amendment to §217.185(a)(3) would eliminate the $1 discount on registration transactions processed through Texas by Texas (TxT) or the department's Internet Vehicle Title and Registration Service (IVTRS). The proposed amendment is necessary to address increased costs for processing registration transactions. The current processing and handling fee, and associated online discount, were established in 2016 and implemented in January 2017. The online discount was created to incentivize Texans to use the online system. Subsequently, the department deployed TxT, which is a mobile application through which a registrant may renew their vehicle registration. Since 2017, the fee and online discount amounts have remained the same, while costs for processing registration transactions throughout the state have increased. In accordance with Transportation Code, §502.1911, the processing and handling fee set by rule must be "sufficient to cover the expenses associated with collecting registration fees." The cumulative inflation rate from January 2017 to January 2025 is over 34%, which has translated into increased costs for information technology infrastructure and staffing to support registration transactions statewide. Moreover, the incentive to get Texans to adopt the online system has worked and is no longer needed: around 30% of registration renewal transactions went through TxT and IVTRS in the past three years. Eliminating the discount for transactions processed online will help support the increased costs of collecting registration fees. The established registration fees would remain the same, and this proposal only seeks to eliminate the online registration discount in the amount of $1 per registered vehicle per year.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Annette Quintero, Director of the Vehicle Titles and Registration Division, has determined that there will be no measurable effect on local employment or the local economy as a result of the proposal.

Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years that the proposed amendments to §217.27 and §217.53 will be in effect, there will be no fiscal impact to state or local governments as a result of the enforcement or administration. There will be no foreseeable impact on costs or revenue.

Ms. Bowman has determined that for each year of the first five years that the proposed amendments to §217.52 are in effect, there will be no significant fiscal impact on state or local governments. The proposed amendments to §217.52 clarify that the fee for restyling an embossed specialty plate to another embossed specialty plate is $75 rather than $50, which is the fee to restyle non-embossed plates. This $25 difference in the applicable fee will not result in significant revenue for state government because the embossed plate program is new and the numbers of embossed plates in circulation are small: the state has not yet collected any fees for restyling an embossed specialty plate to another embossed specialty plate so the clarification of the fee cannot create a change in revenue, and only 9,262 vehicles statewide currently have embossed specialty plates. Even if every owner of a vehicle with an embossed specialty plate decided to restyle it to another embossed specialty plate in the same year, the proposed amendments to §217.52 would result in a statewide total revenue increase of only $231,550 per year. The proposed amendments to §217.52 will have no impact on costs to state or local government.

Ms. Bowman has determined that for each year of the first five years the proposed amendments to §217.185 will be in effect, there will be a fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Elimination of the $1.00 online discount will result in additional revenue to the state in the amount of approximately $6,000,000 per year. The proposed amendments to §217.185 will have no impact to costs to state or local government.

PUBLIC BENEFIT AND COST NOTE. Ms. Quintero and Ms. Bowman have also determined that, for each year of the first five years proposed amendments are in effect, there are several public benefits anticipated and no significant economic costs for persons required to comply with the rules.

Anticipated Public Benefits. The proposed amendments to §217.27 would clarify and prevent confusion about the board's rules regarding two-year registration for new vehicles. The proposed amendments to §217.52 would clarify the fees for

restyling a vendor specialty license plate to an embossed plate to prevent confusion for the public. The proposed amendments to §217.53 would clarify and provide easy reference for the public on what to do with the license plates on their vehicle when they sell it, and how to get a temporary permit when they buy a vehicle without plates. The proposed amendments to §217.185 would ensure sufficient funding for the department to continue to provide efficient and accessible vehicle registration services, online, by mail and in-person.

Anticipated Costs to Comply with the Proposal. Ms. Quintero anticipates that only the proposed amendments to §217.185 will create a cost to comply, and that cost would not be significant. The cost to comply with the proposed amendments to §217.185 would only be $1 per year for persons who register their vehicles online, due to the loss of the $1 online discount. The proposed amendments to §217.27 and §217.53 do not create any costs. Compliance is not required for the cost to restyle a vendor specialty plate to an embossed plate style under the proposed amendments to §217.52 because a person can avoid the cost by choosing not to restyle their vendor specialty plate.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. The department does not anticipate an adverse economic impact to small business, micro-businesses or rural communities as a result of the proposed amendments to §§217.27, 217.52 and 217.53. Regarding the proposed amendments in §217.185, the department anticipates an adverse economic effect on small businesses and micro-businesses that own vehicles and renew the registration for those vehicles online. There will be no adverse impact on rural communities from the proposed amendments since rural governments are exempt from vehicle registration fees under Transportation Code, Chapter 502, Subchapter J.

Of the 3.3 million estimated small and micro-businesses in Texas identified in the 2024 U.S. Small Business Administration Report, it is unknown precisely how many own and register vehicles. However, based on the industries represented in the data, it is reasonable to assume that approximately 64% (or 2.1 million) would have dedicated vehicles registered by the business. Online registration transactions make up approximately 30% of total registrations, suggesting that even if every small and micro-business of that estimated 2.1 million with a dedicated vehicle renewed their registrations online, the total would be approximately 739,000, with an expected adverse economic impact of only $1 per vehicle registered online, per year.

Under Government Code, §2006.002, the department must perform a regulatory flexibility analysis for the proposed amendments to §217.185. The department considered alternatives of not adopting the amendments to §217.185, exempting small and micro-businesses from these amendments, and adopting an online discount of less than $1 for small and micro-business applicants. The department rejected all three options. Foregoing or reducing the revenue created by removing the $1 online discount for 739,000 small and micro-businesses would leave the vehicle registration system underfunded and unable to cover costs, which would in turn make vehicle registration less efficient and less reliable, causing negative repercussions for law enforcement's ability to identify and track vehicles and for vehicle safety. The department, after considering the purpose of the authorizing statutes that require it to "set the fee in an amount that…is sufficient to cover expenses associated with collecting registration fees," does not believe it is feasible to waive or limit the requirements of the proposed amendments for small or micro-business GDN dealers.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed amendments are in effect, no government program would be created or eliminated. Implementation of the proposed amendments would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or a decrease of fees paid to the department. The proposed amendments to §217.52 may result in an increase of fees paid to the department as embossed plates becomes more prevalent and restyling from an embossed plate to another embossed plate becomes more common. The proposed amendments to §217.185 will create an increase of $6,000,000 in fees paid to the department. The proposed amendments to §217.185 would not result in an increase or decrease of a fee, however they would remove an optional online transaction discount, resulting in the department retaining a higher percentage of the unchanged fee. The proposed amendments would not create a new regulation or repeal a regulation. The proposed amendments to §217.52 would expand an existing regulation by including restyling from an embossed plate to another embossed plate design. The proposed amendments to §217.185 would limit an existing regulation by removing the $1 online discount from registration fees. Lastly, the proposed amendments do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

SUBCHAPTER B. MOTOR VEHICLE REGISTRATION

43 TAC §§217.27, 217.52, 217.53

STATUTORY AUTHORITY. The department proposes amendments to §§217.27, 217.52, and 217.53 under Transportation Code, §502.0021, which gives the department the authority to adopt rules to administer Transportation Code, Chapter 502; Transportation Code, §502.044, as amended by Senate Bill 1729, 89th Regular Session (2025), to designate a registration period of 24 consecutive months for certain passenger cars and light trucks; Transportation Code, §504.0011, which gives the board authority to implement and administer Transportation Code, Chapter 504, License Plates; Transportation Code, §504.010, which authorizes the department to adopt rules governing the issuance and placement of license plates on motor vehicles; Transportation Code, §504.0051, which gives the

department authority to issue personalized license plates and forbids the department from issuing replacement personalized license plates unless the vehicle owner pays the statutory fee required under Transportation Code, §504.007; Transportation Code, §504.007, which states that replacement license plates can only be issued if the vehicle owner pays the statutory fee; Transportation Code, §504.6011, which authorizes the sponsor of a specialty license plate to reestablish its specialty license plate under Subchapter J of Transportation Code, Chapter 504, and for the board to establish the fees under Transportation Code, §504.851; Transportation Code, §504.851(a), which allows the department to contract with a private vendor to provide specialty and personalized license plates; Transportation Code, §504.851(b)-(d), which authorize the board to establish fees by rule for the issuance or renewal of personalized license plates that are marketed and sold by the vendor as long as the fees are reasonable and not less than the amounts necessary to allow the department to recover all reasonable costs associated with the procurement, implementation and enforcement of the vendor's contract; Transportation Code, §504.851(i), which requires a contract entered into by the department and a private vendor for the marketing and sale of specialty license plates to allow the vendor to establish a range of premium embossed specialty license plates to be sourced, marketed, and sold by the private vendor; the rulemaking authority provided under Section 3 of Senate Bill 1902, 89th Legislature (2025); and Transportation Code §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department, as well as the statutes referenced throughout the this preamble.

CROSS REFERENCE TO STATUTE. Transportation Code, Chapters 502, 504, and 1002.

§217.27. Vehicle Registration Insignia.

(a) On receipt of a complete initial application for registration with the accompanying documents and fees, the department will issue vehicle registration insignia to be displayed on or kept in the vehicle for which the registration was issued for the current registration period.

(1) If the vehicle has a windshield, the vehicle registration insignia shall be attached to the inside lower left corner of the vehicle's front windshield in a manner that will not obstruct the vision of the driver, unless the vehicle is registered under Transportation Code, Chapter 504, Subchapter B-1.

(2) If the vehicle has no windshield, the vehicle registration insignia shall be attached to the rear license plate unless the vehicle is registered under Transportation Code, Chapter 504, Subchapter B-1, except that registration receipts, retained inside the vehicle, may provide the record of registration for vehicles with permanent trailer plates.

(3) If the vehicle is registered under Transportation Code, Chapter 504, Subchapter B-1, the registration receipt, symbol, tab, or other device prescribed by and issued by the department must be retained with the vehicle and may provide the record of registration for vehicles with a digital license plate. The expiration month and year must appear digitally on the electronic visual display of the rear digital license plate.

(4) If the vehicle is registered as a former military vehicle as prescribed by Transportation Code, §504.502, the vehicle's registration number shall be displayed instead of displaying a symbol, tab, or license plate.

(A) Former military vehicle registration numbers shall be displayed on a prominent location on the vehicle in numbers and letters of at least two inches in height.

(B) To the extent possible, the location and design of the former military vehicle registration number must conform to the vehicle's original military registration number.

(b) Unless otherwise prescribed by law, each vehicle registered under this subchapter:

(1) must display two license plates that are clearly visible, readable, and legible, one at the exterior front and one at the exterior rear of the vehicle that are securely fastened at the exterior front and rear of the vehicle in an upright horizontal position of not less than 12 inches from the ground, measuring from the bottom; or

(2) must display one plate that is securely fastened at or as close as practical to the exterior rear of the vehicle in a position not less than 12 inches from the ground, measuring from the bottom if the vehicle is a road tractor, motorcycle, trailer or semitrailer, except that a vehicle described by Transportation Code, §621.2061 may place the rear plate so that it is clearly visible, readable, and legible.

(c) Each vehicle registered under this subchapter must display license plates:

(1) assigned by the department for the period; or

(2) validated by a registration insignia issued by the department for a registration period consisting of 12 consecutive months at the time of application for registration, except that:

(A) vehicles described by Transportation Code, §502.0024 may obtain a registration insignia for a period consisting of 12, 24, 36, 48 or 60 consecutive months on payment of all fees for each full year of registration; and

(B) vehicles may be registered for 24 consecutive months in accordance with Transportation Code, §502.044(a-1) [~~§548.102~~] on payment of all fees for each year of registration.[~~, regardless of the number of months remaining on the inspection at the time of registration, provided:~~]

~~f(i)~~ ~~the vehicle receives a two-year inspection under Transportation Code, §548.102; and~~]

~~f(ii)~~ ~~the application for registration is made in the name of the purchaser under Transportation Code, §501.0234.~~]

(d) The department may cancel any license plate issued with a personalized license plate number if the department subsequently determines or discovers that the personalized license plate number did not comply with this section when the license plate was issued, or if due to changing language usage, meaning, or interpretation, the personalized license plate number no longer complies with this section. When reviewing a personalized license plate number, the department need not consider the applicant's subjective intent or declared meaning. The department will not issue any license plate containing a personalized license plate number that meets one or more of the following criteria:

(1) The license plate number conflicts with the department's current or proposed general issue license plate numbering system.

(2) The director or the director's designee finds that the personalized license plate number may be considered objectionable. An objectionable license plate number may include words, phrases, or slang in any language; phonetic, numeric, or reverse spelling; acronyms; patterns viewed in mirror image; or code that only a small

segment of the community may be able to readily decipher. An objectionable pattern may be viewed as:

(A) indecent (defined as including a direct reference or connotation to a sexual act, sexual body parts, excreta, or sexual bodily fluids or functions. Additionally, the license plate number "69" is prohibited unless used with the full year (1969) or in combination with a reference to a vehicle;

(B) vulgar, directly or indirectly (defined as profane, swear, or curse words);

(C) derogatory, directly or indirectly (defined as an expression that is demeaning to, belittles, or disparages any person, group, race, ethnicity, nationality, gender, or sexual orientation. "Derogatory" may also include a reference to an organization that advocates the expressions described in this subparagraph);

(D) a direct or indirect negative instruction or command directed at another individual related to the operation of a motor vehicle;

(E) a direct or indirect reference to gangs, illegal activities, implied threats of harm, or expressions that describe, advertise, advocate, promote, encourage, glorify, or condone violence, crime, or unlawful conduct;

(F) a direct or indirect reference to controlled substances or the physiological state produced by such substances, intoxicated states, or a direct or indirect reference that may express, describe, advertise, advocate, promote, encourage, or glorify such substances or states;

(G) a direct representation of law enforcement or other governmental entities, including any reference to a public office or position exclusive to government; or

(H) a pattern that could be misread by law enforcement.

(3) The license plate number is currently on a license plate issued to another owner.

(e) Notwithstanding the provisions of this section, the department may issue license plates with personalized license plate numbers that refer to:

(1) military branches, military rank, military units, military equipment, or status; or

(2) institutions of higher education, including military academies, whether funded privately, by the state, or by the federal government.

(f) A decision to cancel or not to issue a license plate with a personalized license plate number under subsection (d) of this section may be appealed to the executive director of the department or the executive director's designee within 20 days of notification of the cancellation or non-issuance. All appeals must be in writing, and the requesting party may include any written arguments, but shall not be entitled to a contested case hearing. The executive director or the executive director's designee will issue a decision no later than 30 days after the department receives the appeal, unless additional information is sought from the requestor, in which case the time for decision is tolled until the additional information is provided. The decision of the executive director or the executive director's designee is final and may not be appealed to the board. An appeal to the executive director or the executive director's designee is denied by operation of law 31 days from the receipt of the appeal, or if the requestor does not provide additional requested information within ten days of the request.

(g) The provisions of subsection (a) of this section do not apply to vehicles registered with annual license plates issued by the department.

(h) A person whose initial application has been denied will receive a refund if the denial is not appealed in accordance with subsection (f) of this section. If an existing license plate with a personalized license plate number has been canceled, the person may choose a new personalized license plate number that will be valid for the remainder of the term, or the remaining term of the canceled license plate will be forfeited.

§217.52. Marketing of Specialty License Plates through a Private Vendor.

(a) Purpose and scope. The department will enter into a contract with a private vendor to market department-approved specialty license plates in accordance with Transportation Code, Chapter 504, Subchapter J. This section sets out the procedure for approval of the design, purchase, and replacement of vendor specialty license plates. In this section, the license plates marketed by the vendor are referred to as vendor specialty license plates.

(b) Application for approval of vendor specialty license plate designs.

(1) Approval required. The vendor shall obtain the approval of the board for each license plate design the vendor proposes to market in accordance with this section and the contract entered into between the vendor and the department.

(2) Application. The vendor must submit a written application on a form approved by the executive director to the department for approval of each license plate design the vendor proposes to market. The application must include:

(A) a draft design of the specialty license plate;

(B) projected sales of the license plate, including an explanation of how the projected figure was determined;

(C) a marketing plan for the license plate including a description of the target market;

(D) a licensing agreement from the appropriate third party for any design or design element that is intellectual property; and

(E) other information necessary for the board to reach a decision regarding approval of the requested vendor specialty license plate.

(c) Review and approval process. The board will review vendor specialty license plate applications. The board:

(1) will not consider incomplete applications; and

(2) may request additional information from the vendor to reach a decision.

(d) Board decision.

(1) Decision. The decision of the board will be based on:

(A) compliance with Transportation Code, Chapter 504, Subchapter J;

(B) the proposed license plate design, including:

(i) whether the design meets the legibility and reflectivity standards established by the department;

(ii) whether the design meets the standards established by the department for uniqueness to ensure that the proposed license plate complies with Transportation Code, §504.852(c);

(iii) whether the license plate design can accommodate the International Symbol of Access (ISA) as required by Transportation Code, §504.201(f);

(iv) the criteria designated in §217.27 of this title (relating to Vehicle Registration Insignia) as applied to the design;

(v) whether a design is similar enough to an existing license plate design that it may compete with the existing license plate sales; and

(vi) other information provided during the application process.

(2) Public comment on proposed design. All proposed license plate designs will be considered by the board as an agenda item at a regularly or specially called open meeting. Notice of consideration of proposed license plate designs will be posted in accordance with Office of the Secretary of State meeting notice requirements. Notice of each license plate design will be posted on the department's Internet web site to receive public comment at least 25 days in advance of the meeting at which it will be considered. The department will notify all specialty license plate organizations and the sponsoring agencies who administer specialty license plates issued in accordance with Transportation Code, Chapter 504, Subchapter G, of the posting. A comment on the proposed design can be submitted in writing through the mechanism provided on the department's Internet web site for submission of comments. Written comments are welcome and must be received by the department at least 10 days in advance of the meeting. Public comment will be received at the board's meeting.

(e) Final approval and specialty license plate issuance.

(1) Approval. The board will approve or disapprove the specialty license plate application based on all of the information provided pursuant to this subchapter in an open meeting.

(2) Application not approved. If the application is not approved, the applicant may submit a new application and supporting documentation for the design to be considered again by the board if:

(A) the applicant has additional, required documentation; or

(B) the design has been altered to an acceptable degree.

(3) Issuance of approved specialty license plates.

(A) If the vendor's specialty license plate is approved, the vendor must submit the non-refundable start-up fee before any further design and processing of the specialty license plate.

(B) Approval of the specialty license plate does not guarantee that the submitted draft specialty license plate design will be used. The board has final approval of all specialty license plate designs and will provide guidance on the submitted draft design to ensure compliance with the format and specialty license plate specifications.

(f) Redesign of vendor specialty license plates.

(1) On receipt of a written request from the vendor, the department will allow a redesign of a vendor specialty license plate.

(2) The vendor must pay the redesign administrative costs as provided in the contract between the vendor and the department.

(g) Multi-year vendor specialty license plates. Purchasers will have the option of purchasing vendor specialty license plates for a one-year, a three-year, or a five-year period.

(h) License plate categories and associated fees. The categories and the associated fees for vendor specialty license plates are set out in this subsection.

(1) Custom license plates. Custom license plates include license plates with a variety of pre-approved background and character color combinations that may be personalized with either three alpha and two or three numeric characters or two or three numeric and three alpha characters. Generic license plates on standard white sheeting with the word "Texas" that may be personalized with up to six alphanumeric characters are considered custom license plates before December 2, 2010. The fees for issuance of Custom and Generic license plates are $150 for one year, $400 for three years, and $450 for five years.

(2) T-Plates (Premium) license plates. T-Plates (Premium) license plates may be personalized with up to seven alphanumeric characters, including the "T," on colored backgrounds or designs approved by the department. The fees for issuance of T-Plates (Premium) license plates are $150 for one year, $400 for three years, and $450 for five years.

(3) Luxury license plates. Luxury license plates may be personalized with up to six alphanumeric characters on colored backgrounds or designs approved by the department. The fees for issuance of luxury license plates are $150 for one year, $400 for three years, and $450 for five years.

(4) Freedom license plates. Freedom license plates include license plates with a variety of pre-approved background and character color combinations that may be personalized with up to seven alphanumeric characters. The fees for issuance of freedom license plates are $195 for one year, $445 for three years, and $495 for five years.

(5) Background-only license plates. Background-only license plates include non-personalized license plates with a variety of pre-approved background and character color combinations and may be embossed or non-embossed.

(A) The fees for issuance of non-embossed, background-only license plates are $50 for one year, $130 for three years, and $175 for five years.

(B) Except as stated in subsection (h)(9)(C), the fees for embossed, background-only license plates are $125 for one year, $205 for three years, and $250 for five years.

(6) Vendor souvenir license plates. Vendor souvenir license plates are replicas of vendor specialty license plate designs that may be personalized with up to 24 alphanumeric characters. Vendor souvenir license plates are not street legal or legitimate insignias of vehicle registration. The fee for issuance of souvenir license plates is $40.

(7) Auction. The vendor may auction department-approved license plate numbers for one, three, or five year terms with options to renew indefinitely at the current price established for a one, three, or five year luxury category license plate. The purchaser of the auction license plate number may select from the vendor background designs, including any embossed license plate designs, at no additional charge at the time of initial issuance. The auction license plate number may be moved from one vendor design plate to another vendor design license plate as provided in subsection (n)(1) of this section. The auction license plate number may be transferred from owner to owner as provided in subsection (l)(2) of this section.

(8) Embossed, personalized specialty license plates. The vendor may sell embossed, personalized specialty license plates with a variety of pre-approved background and character color combinations that may be personalized with up to seven alphanumeric characters. Except as stated in subsection (h)(7) of this section, the fees for issuance of embossed, personalized specialty license plates are $270 for one year, $520 for three years, and $570 for five years. Except as stated in subsection (h)(9)(C) of this section, the fees under subsection (h)(9)

of this section do not apply to an embossed, personalized specialty license plate.

(9) Personalization and specialty license plate fees.

(A) The fee for the personalization of license plates applied for prior to November 19, 2009 is $40 if the license plates are renewed annually.

(B) The personalization fee for license plates applied for after November 19, 2009 is $40 if the license plates are issued pursuant to Transportation Code, Chapter 504, Subchapters G and I.

(C) If the license plates are renewed annually, the personalization and specialty license plate fees remain the same fee as at the time of issuance if a sponsor of a specialty license plate authorized under Transportation Code, Chapter 504, Subchapters G and I signs a contract with the vendor in accordance with Transportation Code, Chapter 504, Subchapter J, even if the board approves the specialty license plate to be an embossed specialty license plate design.

(i) Payment of fees.

(1) Payment of specialty license plate fees. The fees for issuance of vendor specialty license plates will be paid directly to the state through vendor and state systems for the license plate category and period selected by the purchaser. A person who purchases a multi-year vendor specialty license plate must pay upon purchase the full fee which includes the renewal fees.

(2) Payment of statutory registration fees. To be valid for use on a motor vehicle, the license plate owner is required to pay, in addition to the vendor specialty license plate fees, any statutorily required registration fees in the amount as provided by Transportation Code, Chapter 502, and this subchapter.

(j) Refunds. Fees for vendor specialty license plate fees will not be refunded after an application is submitted to the vendor and the department has approved issuance of the license plate.

(k) Replacement.

(1) Application. An owner must apply directly to the county tax assessor-collector for the issuance of replacement vendor specialty license plates and must pay the fee described in paragraphs (2) or (3) of this subsection, whichever applies.

(2) Lost or mutilated vendor specialty license plates. To replace vendor specialty license plates that are lost or mutilated, the owner must pay the statutory replacement fee provided in Transportation Code, §504.007.

(3) Optional replacements. An owner of a vendor specialty license plate may replace vendor specialty license plates by submitting a request to the county tax assessor-collector accompanied by the payment of a $6 fee.

(4) Interim replacement tags. If the vendor specialty license plates are lost or mutilated to such an extent that they are unusable, replacement specialty license plates may be remanufactured. The county tax assessor-collector will issue interim replacement tags for use until the replacements are available. The owner's vendor specialty license plate number will be shown on the interim replacement tags.

(5) Stolen vendor specialty license plates. The county tax assessor-collector will not approve the issuance of replacement vendor specialty license plates with the same license plate number if the department's records indicate that the vehicle displaying that license plate number was reported stolen or the license plates themselves were reported stolen to law enforcement.

(l) Transfer of vendor specialty license plates.

(1) Transfer between vehicles. The owner of a vehicle with vendor specialty license plates may transfer the specialty license plates between vehicles by filing an application through the county tax assessor-collector if the vehicle to which the specialty license plates are transferred:

(A) is titled or leased in the owner's name; and

(B) meets the vehicle classification requirements for that specialty license plate.

(2) Transfer between owners. Vendor specialty license plates may not be transferred between persons unless the specialty license plate number was initially purchased through auction as provided in subsection (h)(7) of this section. An auctioned license plate number may be transferred as a specialty license plate or as a virtual pattern to be manufactured on a new background as provided under the restyle option in subsection (n)(1) of this section. In addition to the fee paid at auction, the new owner of an auctioned license plate number or plate will pay the department a fee of $25 to cover the cost of the transfer, and complete the department's prescribed application at the time of transfer.

(m) Gift license plates.

(1) A person may purchase license plates as a gift for another person if the purchaser submits a statement that provides:

(A) the purchaser's name and address;

(B) the name and address of the person who will receive the license plates; and

(C) the vehicle identification number of the vehicle on which the license plates will be displayed or a statement that the license plates will not be displayed on a vehicle.

(2) To be valid for use on a motor vehicle, the recipient of the license plates must file an application with the county tax assessor-collector and pay the statutorily required registration fees in the amount as provided by Transportation Code, Chapter 502, and this subchapter.

(n) Restyled vendor specialty license plates. A person who has purchased a multi-year vendor specialty license plate may request a restyled license plate at any time during the term of the plate.

(1) For the purposes of this subsection, "restyled license plate" is a vendor specialty license plate that has a different style from the originally purchased vendor specialty license plate but:

(A) is within the same price category, except if the license plate number was purchased through auction and has the same alpha-numeric characters and expiration date as the previously issued multi-year license plates; or

(B) is restyling [~~from a non-embossed specialty license plate style~~] to an embossed specialty license plate style and has the same alpha-numeric characters and expiration date as the previously issued multi-year license plates.

(2) The fee for each restyled license plate is:

(A) $50 for restyling under subsection (n)(1)(A) of this section; or

(B) $75 for restyling under subsection (n)(1)(B) of this section.

§217.53. Disposition of License Plates and Registration Insignia upon Sale or Transfer of Motor Vehicle.

(a) Upon the sale or transfer of a motor vehicle to a dealer, the dealer shall remove the license plates and remove and dispose of the registration insignia from the motor vehicle. The dealer shall transfer or dispose of the removed [~~and retain the assigned~~] general issue license plates [~~for disposition at the time of a subsequent purchase~~] in accordance with §215.151(d) of this title (relating to License Plate General Use Requirements)[~~, and the dealer shall remove and dispose of the registration insignia as provided in Transportation Code, §502.491~~].

(b) Upon the sale or transfer of a motor vehicle in which neither party is a dealer, the [~~general issue~~] license plates shall be removed from [~~remain with~~] the motor vehicle by the seller or transferor [~~as provided in Transportation Code, §504.901~~]. The removed license plates may be transferred to another motor vehicle if the following requirements are met:

(1) the motor vehicle is titled in the seller's or transferor's name;

(2) the motor vehicle is of the same vehicle classification as the motor vehicle from which the license plates were removed; and

(3) the county tax assessor-collector with which the application is filed accepts a request to transfer the license plates by as provided by Transportation Code, §501.023 or §502.040, whichever applies.

(c) License plates that are not transferred to another motor vehicle as described in subsection (b) of this section within 10 days after the date the license plate is removed from the motor vehicle [~~A license plate other than a general issue license plate shall be removed by the owner of a motor vehicle that is sold or transferred. Removed license plates may be transferred if eligible; otherwise,~~] must be rendered unusable by permanently marking the front of the plate with the word "VOID" or a large "X" and: [~~disposed of in a manner that renders the license plates unusable or that ensures the license plates will not be available for fraudulent use on a motor vehicle~~].

(1) destroying the license plate;

(2) recycling the license plate using a metal recycler registered under Occupations Code Chapter 1956; or

(3) returning the license plate to the department or county tax assessor-collector.

(d) A person who obtains a motor vehicle in a transaction described by subsection (b) of this section may obtain one vehicle transit permit (temporary single-trip permit), as provided by Transportation Code, §502.492, through the department's website at www.txdmv.gov. [~~If the purchaser at a retail sale chooses to obtain replacement general issue license plates, the replaced license plates must be disposed of in a manner that renders the license plates unusable or that ensures the license plates will not be available for fraudulent use on a motor vehicle.~~]

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
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Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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SUBCHAPTER I. PROCESSING AND HANDLING FEES

43 TAC §217.185

STATUTORY AUTHORITY. The department proposes amendments to §217.185 under Transportation Code, §502.0021, which gives the department the authority to adopt rules to administer Transportation Code, Chapter 502; Transportation Code §502.1911, which authorizes the board to adopt rules to set registration processing and handling fees, and Transportation Code §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department.

CROSS REFERENCE TO STATUTE. Transportation Code, Chapters 502 and 1002.

§217.185. Allocation of Processing and Handling Fees.

(a) For registration transactions, except as provided in subsection (b) of this section, the fee amounts established in §217.183 of this title (relating to Fee Amount) shall be allocated as follows:

(1) If the registration transaction was processed in person at the office of the county tax assessor-collector or mailed to an office of the county tax assessor-collector:

(A) the county tax assessor-collector may retain $2.30; and

(B) the remaining amount shall be remitted to the department.

(2) If the registration transaction was processed through the department or the TxFLEET system or is a registration processed under Transportation Code, §§502.0023, 502.091, or 502.255; or §217.46(b)(5) of this title (relating to Commercial Vehicle Registration):

(A) $2.30 will be remitted to the county tax assessor-collector; and

(B) the remaining amount shall be retained by the department.

(3) If the registration transaction was processed through Texas by Texas (TxT) or the department's Internet Vehicle Title and Registration Service (IVTRS), [~~the fee established in §217.183 of this title is discounted by $1~~]:

(A) Texas Online receives the amount set pursuant to Government Code, §2054.2591, Fees;

(B) the county tax assessor-collector may retain $.25; and

(C) the remaining amount shall be remitted to the department.

(4) If the registration transaction was processed by a limited service deputy or full service deputy appointed by the county tax assessor-collector in accordance with Subchapter H of this chapter (relating to Deputies):

(A) the deputy may retain:

(i) the amount specified in §217.168(c) of this title (relating to Deputy Fee Amounts). The deputy must remit the remainder of the processing and handling fee to the county tax assessor-collector; and

(ii) the convenience fee established in §217.168, if the registration transaction is processed by a full service deputy;

(B) the county tax assessor-collector may retain $1.30; and

(C) the county tax assessor-collector must remit the remaining amount to the department.

(5) If the registration transaction was processed by a dealer deputy appointed by the county tax assessor-collector in accordance with Subchapter H of this chapter (relating to Deputies):

(A) the deputy must remit the processing and handling fee to the county tax assessor-collector;

(B) the county tax assessor-collector may retain $2.30; and

(C) the county tax assessor-collector must remit the remaining amount to the department.

(b) For transactions under Transportation Code, §§502.093 - 502.095, the entity receiving the application and processing the transaction collects the $4.75 processing and handling fee established in §217.183:

(1) the entity may retain $4.25;

(2) the entity must remit the remaining amount to the department; and

(3) a full service deputy processing a special registration permit or special registration license plate transaction may not charge a convenience fee for that transaction.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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For further information, please call: (512) 465-4160

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CHAPTER 220. AUTOMATED MOTOR VEHICLES

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes new 43 Texas Administrative Code (TAC) Chapter 220, Automated Motor Vehicles; Subchapter A, General Provisions, §220.1 and §220.3; Subchapter B, Authorization to Operate an Automated Motor Vehicle, §§220.20, 220.23, 220.26, 220.28, and 220.30; and Subchapter C, Administrative Sanctions, §220.50, concerning automated motor vehicles.

The proposed new Chapter 220 is necessary to implement Senate Bill 2807, 89th Legislature, Regular Session (2025), which requires a person to hold an automated motor vehicle authorization to operate one or more automated motor vehicles to transport property or passengers in furtherance of a commercial enterprise on highways and streets in Texas without a human driver.

EXPLANATION.

Subchapter A. General Provisions

Proposed new §220.1 would provide the purpose and scope of proposed new Chapter 220. Proposed new §220.3 would specify that the definitions for proposed new Chapter 220 are the definitions contained in Transportation Code, Chapter 545, Subchapter J.

Subchapter B. Authorization to Operate an Automated Motor Vehicle

Proposed new §220.20 would provide the purpose and scope of proposed new Subchapter B regarding the form and manner of an application for authorization to operate one or more automated motor vehicles, as well as the requirements to update certain documents, under Transportation Code, §545.456.

Proposed new §220.23 would prescribe the form and manner by which a person may apply to the department for authorization to operate one or more automated motor vehicles, as required by Transportation Code, §545.456(a). The application requirements are similar to the application requirements in the department's rules for other programs, such as operating authority for a motor carrier under 43 TAC Chapter 218. However, the application requirements under §220.23 were customized to comply with Transportation Code, §545.456 and to obtain information that the department needs to comply with new Chapter 220 and Transportation Code, §545.456 and §545.459. The requirement for the applicant to provide the business entity type and Texas Secretary of State file number, as applicable, will assist the department in identifying the applicant and verifying certain application information as necessary.

The vehicle descriptive information specified in proposed new §220.23(b)(1)(B) is consistent with certain data fields that are included on Form 130-U, which is the department's Application for Texas Title and/or Registration. The information required under proposed new §220.23 may also help law enforcement determine whether an automated motor vehicle is operating under an authorization issued by the department under Transportation Code, §545.456, so the law enforcement officer can determine whether to issue a citation to the owner of the vehicle or the authorization holder under Transportation Code, §545.454(b).

Proposed new §220.26 would prescribe the requirements and process regarding an authorized holder's obligation to provide the department with updated documents under Transportation Code, §545.456(e) and §545.456(f)(2). Proposed new §220.26(b)(3) would impose a five-day deadline for an authorization holder to electronically submit an updated or current document when the department requests the authorization holder for an updated or current document under Transportation Code, §545.456(f)(2). The five-day deadline under §545.456(f)(2) is different than the deadline under §545.456(e) to address situations in which the department needs an updated or current document more quickly than 30 days, such as when the operation of an automated motor vehicle endangers the public as stated in Transportation Code, §545.459(a) and (b), or when a law enforcement officer needs updated or current documents to determine whether an automated motor vehicle is operating under an authorization issued by the department under Transportation Code, §545.456. However, proposed new §220.26(b)(3) would also authorize the department to grant an extension on the five-day deadline in response to a written request from the authorization holder.

Proposed new §220.26(b)(4) would require the authorization holder to submit any requests for an extension prior to the department's deadline for the updated or current document.

A request for an extension after the deadline has passed is not a reasonable request. Proposed new §220.26(b)(4) would also require an extension request to be sent to the designated address listed in the department's request to the authorization holder for an updated or current document. This will allow the department flexibility in determining how best to staff and monitor communications with authorization holders. Proposed new §220.26(b)(5) would require the authorization holder's request for an extension to contain an explanation on why five days is not reasonable, why the authorization holder needs more time (including the specific deadline the authorization holder is requesting), and whether the authorization holder's requested deadline is likely to result in harm to the public health, safety, or welfare. Automated motor vehicles are a new and evolving technology. The authorization holder is in the best position to know about the automated motor vehicles that it operates and the automated motor vehicle industry in general. The authorization holder is in the best position to articulate its reasons for an extension on the five-day deadline.

Proposed new §220.28 would provide clarity to the automated motor vehicle industry regarding the computation of time under proposed new Chapter 220, as well as under Transportation Code, §545.456 and §545.459, by aligning the computation with Government Code, §311.014 and specifying calendar days rather than business days.

Proposed new §220.30 would require a written statement and certification required by Transportation Code, §545.456 to contain an authorized signature to ensure that the statement and certification are accurate and enforceable. An electronic signature is legally acceptable under Business and Commerce Code, §322.007.

Subchapter C. Administrative Sanctions

Proposed new §220.50 would state that the department's rules regarding administrative sanctions for authorization holders are located in Chapter 224 of the department's rules. This proposed new section is consistent with other department rules, which state where to find the department's rules relating to adjudicative practice and procedure as a courtesy to the regulated industries and others.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the new sections will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Jimmy Archer, Director of the Motor Carrier Division (MCD), has determined that there will be no significant impact on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Mr. Archer has also determined that, for each year of the first five years the new sections are in effect, there are several anticipated public benefits and no costs of compliance.

Anticipated Public Benefits. The public benefits anticipated as a result of the proposal include the safety of the traveling public, and consistent requirements for the automated motor vehicle industry operating in Texas. The application requirements for an authorization under proposed new §220.23, as well as updates to the documents under proposed new §220.26, would provide information to the department that the department needs to impose administrative sanctions against an authorization holder under Chapter 224 of this title, including the suspension, revocation, or cancellation of the authorization, if the department determines that the operation of the automated motor vehicle on a highway or street in this state endangers the public. The information that an applicant must provide to the department under proposed new §220.23, as well as updates to the documents under proposed new §220.26, would provide information for law enforcement to determine whether to issue a citation to the owner or the authorization holder for a violation of traffic or motor vehicle laws related to the vehicle under Transportation Code, §545.454(b).

The proposed new rules in Chapter 220 would provide consistency for the automated motor vehicle industry operating in Texas because the language in proposed new §220.23 would prescribe certain information that an applicant for authorization under Transportation Code, §545.456 must provide to the department, as well as the form by which a person may apply for such authorization, and the form by which an authorization holder shall update a document described by Transportation Code, §545.456(b)(1), (2), or (3).

Anticipated Costs To Comply With The Proposal. Mr. Archer anticipates that there will be no costs to comply with these proposed rules. The proposed rules do not impose a fee on an applicant for authorization under Transportation Code, §545.456. Also, most of the application requirements are specified by Transportation Code, §545.456.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by Government Code, §2006.002, the department has determined that the proposed new sections will not have an adverse economic effect on small businesses, micro-businesses, and rural communities because the rules do not create costs beyond those required by statute. In addition, the requirements under proposed new Chapter 220 are created to ensure the safety of the traveling public in this state, which falls under the exception in Government Code, §2006.002(c-1). Therefore, the department is not required to prepare a regulatory flexibility analysis under Government Code, §2006.002.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed new sections are in effect, a new government program would be created. Implementation of the proposed new sections would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or an increase or decrease of fees paid to the department. The proposed new sections create new regulations, and do not expand, limit or repeal existing regulations. Lastly, the proposed new sections do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written com-

ments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

SUBCHAPTER A. GENERAL PROVISIONS

43 TAC §220.1, §220.3

STATUTORY AUTHORITY. The department proposes new sections under Transportation Code, §545.456, which requires the board by rule to prescribe the form and manner by which a person may apply to the department for authorization to operate automated motor vehicles to transport property or passengers in furtherance of a commercial enterprise on highways and streets in this state without a human driver; Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed new sections would implement Transportation Code, Chapter 545, Subchapter J, and §1002.001; and Government Code, Chapter 2001.

§220.1. Purpose and Scope.

This chapter prescribes the form and manner by which a person may apply to the department for authorization to operate one or more automated motor vehicles to transport property or passengers in furtherance of a commercial enterprise on highways and streets in this state without a human driver, as well as the requirements for an authorization holder to provide the department with certain updated documents, under Transportation Code, §545.456. This chapter also references the department's authority to impose administrative sanctions against an authorization holder under Transportation Code, §545.456 and §545.459.

§220.3. Definitions.

The definitions contained in Transportation Code, Chapter 545, Subchapter J govern this chapter. In the event of a conflict, the definitions referenced in Transportation Code, Chapter 545, Subchapter J control.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502341
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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SUBCHAPTER B. AUTHORIZATION TO OPERATE AN AUTOMATED MOTOR VEHICLE

43 TAC §§220.20, 220.23, 220.26, 220.28, 220.30

STATUTORY AUTHORITY. The department proposes new sections under Transportation Code, §545.456, which requires the board by rule to prescribe the form and manner by which a person may apply to the department for authorization to operate automated motor vehicles to transport property or passengers in furtherance of a commercial enterprise on highways and streets in this state without a human driver; Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed new sections would implement Transportation Code, Chapter 545, Subchapter J, and §1002.001; and Government Code, Chapter 2001.

§220.20. Purpose and Scope.

This subchapter prescribes the form and manner by which an applicant may apply for authorization to operate one or more automated motor vehicles, and the requirements to update certain documents provided to the department, under Transportation Code, §545.456.

§220.23. Application Requirements.

(a) An application for authorization to operate one or more automated motor vehicles under Transportation Code, §545.456 must be:

(1) submitted electronically in the department's designated system; and

(2) completed by the applicant or an authorized representative of the applicant.

(b) An application for authorization to operate one or more automated motor vehicles under Transportation Code, §545.456 must contain the following:

(1) a written statement by the person that includes the following information:

(A) the applicant's name, business entity type (such as sole proprietor, corporation, or limited liability company), telephone number, email address, mailing address, and Texas Secretary of State file number, as applicable; and

(B) the following information for each automated motor vehicle the applicant intends to operate under its authorization:

(i) the vehicle identification number;

(ii) year;

(iii) make; and

(iv) model; and

(2) the written statement and certification required by Transportation Code, §545.456(b)(2) and (3).

(c) An authorized representative of the applicant who submits an application with the department on behalf of an applicant may be required to provide written proof to the department of authority to act on behalf of the applicant.

§220.26. Updates under Transportation Code, §545.456(e) and §545.456(f)(2).

(a) Under Transportation Code, §545.456(e), an authorization holder shall provide the department with an update to a document described by §220.23(b)(1) or (2) of this title (relating to Application Requirements) not later than the 30th day after the date material information changes. The authorization holder shall electronically submit the update in the form and manner, and subject to the requirements specified in §220.23 of this title.

(b) Under Transportation Code, §545.456(f)(2), the department may request the authorization holder to provide the department with an updated or current document described by §220.23(b)(1) or (2) of this title. Such requests are subject to the following requirements:

(1) The department shall make such request by email, using the authorization holder's email address on file in the department's electronic system referenced in §220.23 of this title;

(2) The authorization holder shall electronically submit the updated or current document in the form and manner, and subject to the requirements specified in §220.23 of this title; and

(3) The deadline for the authorization holder to electronically submit the updated or current document is five days from the date of the department's request, unless the department grants an extension on the five-day deadline in response to a written request from the authorization holder for an extension that the department determines is reasonable and unlikely to result in harm to the public health, safety, or welfare.

(4) Any request for an extension must be submitted:

(A) prior to the department's deadline for the updated or current document; and

(B) to the designated address listed in the department's request to the authorization holder for an updated or current document.

(5) Any request for an extension must contain an explanation regarding the following:

(A) why five days is not reasonable;

(B) why the authorization holder needs more time and the specific deadline the authorization holder is requesting; and

(C) whether the authorization holder's requested deadline is likely to result in harm to the public health, safety, or welfare.

§220.28. Computation of Time.

(a) Any time period prescribed or allowed by this chapter or Transportation Code, §545.456 and §545.459 shall be computed in accordance with Government Code, §311.014.

(b) Time shall be computed using calendar days rather than business days, unless otherwise specified in statute.

§220.30. Signature Requirement on Written Statement and Certification.

A written statement and certification required by Transportation Code, §545.456 must be signed by the authorization holder or its authorized representative.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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TRD-202502342
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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SUBCHAPTER C. ADMINISTRATIVE SANCTIONS

43 TAC §220.50

STATUTORY AUTHORITY. The department proposes this new section under Transportation Code, §545.456, which requires the department to prescribe the form and manner by which an authorization holder must update a document described by Transportation Code, §545.456(b)(1) through (3); Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed new section would implement Transportation Code, Chapter 545, Subchapter J, and §1002.001; and Government Code, Chapter 2001.

§220.50. Administrative Sanctions.

The department may take action against the authorization holder in accordance with Chapter 224 of this title (relating to Adjudicative Practice and Procedure) and Transportation Code, §545.456 and §545.459.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
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CHAPTER 221. SALVAGE VEHICLE DEALERS

SUBCHAPTER B. LICENSING

43 TAC §221.17

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code (TAC) Subchapter B, Licensing; §221.17, License Processing for Military Service Members, Spouses, and Veterans. These proposed amendments are necessary to implement House Bill (HB) 5629, 89th Legislature (2025), and Senate Bill (SB) 1818, 89th Regular Session (2025), both of which become effective on September 1, 2025. HB 5629 amended

Occupations Code, §55.004 and §55.0041 to change the standard for comparing licensing requirements in other states with Texas requirements and to change license request submission requirements, and added new §55.0042, which describes the standards for when the department may consider an applicant to be in good standing with a licensing authority in another state.

EXPLANATION.

Proposed amendments to §221.17(b)(1)(A) would require a military service member or military spouse to submit to the department a complete application for licensure. This proposed amendment is necessary to implement Occupations Code, §55.0041(b), as amended by HB 5629, which requires a military service member or military spouse to submit an application in a form prescribed by the agency and deletes a requirement to provide a notice. A proposed amendment to §221.17(b)(1)(B) would delete an unnecessary conjunction. To implement Occupations Code, §55.0041(b)(2), as amended by HB 5629, proposed amendments to §221.17(b)(1)(C) would add a requirement for an applicant who is a military spouse to submit a copy of the marriage license to the department and would delete a requirement for a military service member or military spouse to submit documentation demonstrating that the military service member or military spouse is licensed and in good standing in another jurisdiction for the relevant business or occupation. A proposed amendment would add new §221.17(b)(1)(D) to require a notarized affidavit as required by Occupations Code, §55.0041(b)(3), as amended by HB 5629. Proposed amendments to §221.17(b)(2) would substitute "application" for "notice" and update a reference to paragraph (1) consistent with proposed amendments to §221.17(b)(1) and to implement Occupations Code, §55.0041, as amended by HB 5629. Proposed amendments to §221.17(b)(2) and §221.17(b)(3) would substitute "state" for "jurisdiction" consistent with Occupations Code, §55.0041, as amended by HB 5629. Proposed amendments to §221.17(b)(2)(B) and §221.17(b)(3) would replace the phrase "substantially equivalent" to implement Occupations Code, §55.0041, as amended by HB 5629, by describing the revised standard for comparing the license requirements in another state with Texas requirements. Proposed amendments would add new §221.17(b)(2)(C) to state that the department will issue a provisional license upon receipt of a license application from a military service member, military veteran, or military spouse. These amendments would implement Occupations Code, §55.0041, as amended by SB 1818. Proposed amendments to §221.17(b)(3) would add a reference to license eligibility if the applicant was previously licensed in good standing in Texas in the last five years, would add language that the department will notify an applicant why the department is currently unable issue a license, and would change the time for the department to act on an application submitted by a military service member or military spouse from 30 days to 10 days to implement with Occupations Code, §55.0041, as amended by HB 5629.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the amendments will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Monique Johnston, Director of the Motor Vehicle Division (MVD), has determined that there will be no measurable effect on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Ms. Johnston has also determined that, for each year of the first five years the amended section is in effect, the public may benefit because these amendments may encourage military service members or military spouses to apply for a license and build a business serving Texas citizens.

Anticipated Public Benefits. The public benefits anticipated as a result of the proposal include economic benefits resulting from increasing the number of licensed businesses that serve Texas citizens.

Anticipated Costs to Comply With The Proposal. Ms. Johnston anticipates that there will be no costs to comply with these rules.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by the Government Code, §2006.002, the department has determined that the proposed amendments will not have an adverse economic effect on small businesses, micro-businesses, and rural communities because rural communities are not subject to licensing requirements and the proposal does not require any additional costs for license holders. The department has an electronic licensing system available to all applicants that allows an applicant to apply online for a license and upload any required documents. This rule proposal does not impact small businesses or micro-businesses. Therefore, the department is not required to prepare a regulatory flexibility analysis under Government Code, §2006.002.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under the Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed amendments are in effect, no government program would be created or eliminated. Implementation of the proposed amendments would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or an increase or decrease in fees paid to the department. The proposed amendments do not create a new regulation, or expand, limit, or repeal an existing regulation. Lastly, the proposed amendments do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

STATUTORY AUTHORITY. The department proposes amendments to Chapter 221 under Occupations Code, §2302.051, which authorizes the board to adopt rules as necessary to administer Occupations Code, Chapter 2302; Occupations Code, §2302.052, which assigns the board a duty to set reasonable and necessary application fees, license fees, renewal fees, and

other fees as required to implement Chapter 2302; Occupations Code, §2302.103, which requires a salvage vehicle dealer to apply for a license on a form prescribed by the department and pay an application fee; Occupations Code, §2302.104, which prescribes content that must be included in an application; Occupations Code, §2302.105, which requires the department to complete an investigation of the applicant's qualifications before issuing a license; Occupations Code, §2302.108, which authorizes the department to deny, suspend, revoke, or reinstate a license issued under Chapter 2302 consistent with the requirements of Government Code, Chapter 2001; and Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department.

The department also proposes amendments and under the authority of Transportation Code, §§501.0041, 502.0021, and 503.002; and Government Code, §§2001.004, and 2001.039, and 2001.054, in addition to the statutory authority referenced throughout this preamble.

Transportation Code, §501.0041 authorizes the department to adopt rules to administer Transportation Code, Chapter 501. Transportation Code, §502.0021 authorizes the department to adopt rules to administer Transportation Code, Chapter 502. Transportation Code, §503.002 authorizes the department to adopt rules to administer Transportation Code, Chapter 503.

Government Code, §2001.004 requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures. Government Code, §2001.039 requires state agencies to readopt, readopt with amendments, or repeal a rule as the result of reviewing the rule. Government Code, §2001.054 specifies the requirements regarding the grant, denial, renewal, revocation, suspension, annulment, or withdrawal of a license.

CROSS REFERENCE TO STATUTE. These rule revisions would implement Government Code, Chapter 2001; Occupations Code, Chapters 53, 55, and 2302; and Transportation Code, Chapters 501-503, and 1002.

§221.17. License Processing for Military Service Members, Spouses, and Veterans

(a) The department will process a license, amendment, or renewal application submitted for licensing of a military service member, military spouse, or military veteran in accordance with Occupations Code, Chapter 55. A license holder who fails to timely file a sufficient renewal application because the license holder was on active duty is exempt from any increased fee or penalty imposed by the department.

(b) A military service member or military spouse may engage in a business or occupation for which a department issued license is required if the military service member or military spouse meets the requirements of Occupations Code, §55.0041 and this section.

(1) A military service member or military spouse must submit to the department:

(A) a complete application [~~notice of the military service member or military spouse's intent to engage in a business or occupation in Texas for which a department issued license is required~~];

(B) proof of the military service member being stationed in Texas and a copy of the military service member or military spouse's military identification card; [~~and~~]

(C) if the applicant is a military spouse, a copy of the military spouse's marriage license; and [~~documentation demonstrating that the military service member or military spouse is licensed and in good standing in another jurisdiction for the relevant business or occupation.~~]

(D) a notarized affidavit as required by Occupations Code, § 55.0041(b)(3).

(2) Upon receipt of the application [~~notice~~] and documentation required by paragraph (1) [~~paragraphs (1)(B) and (1)(C)~~] of this subsection, the department shall:

(A) confirm with the other licensing state [~~jurisdiction~~] that the military service member or military spouse is currently licensed and in good standing for the relevant business or occupation; and

(B) conduct a comparison of the other state's [~~jurisdiction's~~] license requirements, statutes, and rules with the department's licensing requirements to determine if the requirements are similar in scope of practice; and [~~substantially equivalent.~~]

(C) issue a provisional license.

(3) If the department confirms that a military service member or military spouse is currently licensed in good standing in another state [~~jurisdiction~~] with [~~substantially equivalent~~] licensing requirements that are similar in scope and practice, or was licensed in good standing in Texas in the last five years, the department shall issue a license to the military service member or military spouse for the relevant business or occupation, or notify the applicant why the department is currently unable to issue a license pursuant to Occupations Code, §55.0041(b-1), within 10 [~~30~~] days. The license is subject to the requirements of this chapter and Occupations Code, Chapter 2302 in the same manner as a license issued under the standard application process, unless exempted or modified under Occupations Code, Chapter 55.

(c) This section establishes requirements and procedures authorized or required by Occupations Code, Chapter 55, and does not modify or alter rights that may be provided under federal law.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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CHAPTER 224. ADJUDICATIVE PRACTICE AND PROCEDURE

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code (TAC) Chapter 224, Adjudicative Practice and Procedure; Subchapter A, General Provisions, §§224.1, 224.5, 224.27, and 224.29; proposes amendments to Subchapter D, Motor Carrier and Oversize or Overweight Vehicle or Load Enforcement, §224.110; proposes amendments to Subchapter E, Contested Cases Referred to SOAH, §§224.150, 224.152, 224.164, and 224.166; proposes amendments to Subchapter F, Board Procedures in Contested Cases, §§224.190, 224.194, 224.198,

224.200, and 224.204; proposes new Subchapter H, Automated Motor Vehicle Authorizations, §§224.290, 224.292, and 224.294; and proposes new Subchapter I, Motor Carrier Division Director Procedures in Contested Cases, §§224.310, 224.312, 224.314, 224.316, 224.318, 224.320, 224.322, 224.324, and 224.326, concerning adjudicative practice and procedure. The amendments and new sections are necessary to implement Senate Bill (SB) 2807, 89th Legislature, Regular Session (2025) regarding administrative sanctions against an automated motor vehicle authorization holder; to provide the requirements when the director of the department's Motor Carrier Division is the final order authority; to provide procedures regarding a special public meeting at which the director of the department's Motor Carrier Division is authorized to review a contested case; and to clean up the rule text.

SB 2807 amends Subchapter J of Chapter 545 of the Transportation Code regarding the operation of automated motor vehicles. The SB 2807 amendments include a requirement for a person to receive and maintain authorization from the department to operate an automated motor vehicle to transport property or passengers in furtherance of a commercial enterprise on a highway or street in Texas without a human driver.

EXPLANATION.

Subchapter A. General Provisions

Proposed amendments to §224.1 would implement SB 2807 by expanding the scope of the subchapter to include the adjudication of a contested case arising under Transportation Code, §545.459(k) regarding the suspension, revocation, or cancellation of an authorization under Transportation Code, §545.456; the imposition of a restriction on the operation of the automated motor vehicle under Transportation Code, §545.459(k); and the rescission of a suspension, revocation, or cancellation of an authorization, or the removal of a restriction on the operation of the automated motor vehicle under Transportation Code, §545.459(k). Proposed amendments to §224.1 would also modify punctuation and language to address the added reference to Transportation Code, §545.459(k).

Proposed amendments to §224.5 would add references to the department's final order authority in subsections (a) and (b) to clean up the rule text to clarify that it applies to the department's Motor Carrier Division Director in contested cases arising under Transportation Code, Chapter 643. The term "final order authority" is defined in §224.3 as the person with authority under statute or a board rule to issue a final order. Although §224.5 currently refers to a board delegate in subsections (a) and (b), the authority of the department's Motor Carrier Division Director to issue final orders under Transportation Code, Chapter 643 was provided by the department's executive director under Transportation Code, §643.001(2), rather than by delegation of the board. These proposed amendments would clarify that Government Code, §2001.061, regarding the prohibition against ex parte communications concerning a contested case, apply to a contested case under Transportation Code, Chapter 643 for which the department's Motor Carrier Division Director has final order authority.

Under proposed amendments to §224.27 and §224.29, and under proposed new §224.294(j), the final order authority for contested cases under Transportation Code, §545.459(k) would be the department's Motor Carrier Division Director or the board, depending on whether the administrative law judge from the State Office of Administrative Hearings (SOAH) issued a proposal for decision and whether the proposal for decision is for a default proceeding under 1 TAC §155.501. If the SOAH administrative law judge issued a proposal for decision that is not based on a default proceeding at SOAH, the board is the final order authority for the contested case. If the proposal for decision is based on a default proceeding at SOAH or if there is not a proposal for decision, the department's Motor Carrier Division Director is the final order authority for the contested case, including contested cases resolved under 1 TAC §155.503 (Dismissal) or Government Code, §2001.056 (Informal Disposition of Contested Cases).

A proposed amendment to §224.27(b) would implement SB 2807 by stating that the board has final order authority under a contested case filed under Transportation Code, §545.459(k), except as provided by §224.29. Proposed amendments to §224.27 would also modify language and punctuation due to the proposed reference to Transportation Code, §545.459(k).

A proposed amendment to §224.29(c) would delete a reference to "any power relating to a contested case" because §224.29 is specifically about final order authority. Other sections in Chapter 224 govern other authority regarding a contested case, such as §224.13, which sets out the authority for certain department staff to issue a subpoena or commission to take a deposition in a contested case. A proposed amendment to §224.29(c) would also delete a comma due to the proposed deletion of language from this subsection. In addition, a proposed amendment to §224.29(c) would clarify that Transportation Code, §643.001(2) is the other statutory authority under which final order authority may be delegated to the director of the department's Motor Carrier Division.

Proposed amendments to §224.29 would add new subsection (d) to delegate authority to the department's Motor Carrier Division Director to issue a final order under Transportation Code, §545.459(k) in a contested case in which the administrative law judge at SOAH has not submitted a proposal for decision to the department for consideration by the final order authority, and a contested case in which the administrative law judge at SOAH submitted a proposal for decision regarding a default proceeding to the department for consideration by the final order authority, as explained above. This delegation is authorized by Transportation Code, §1003.005. In addition, proposed amendments to §224.29 would re-letter current subsection (d) to subsection (e), and update references in that subsection due to the proposed addition of new subsection (d).

Subchapter D. Motor Carrier and Oversize or Overweight Vehicle or Load Enforcement

A proposed amendment to §224.110 regarding the purpose and scope of Subchapter D would replace the reference to Subchapter F with a reference to proposed new Subchapter I regarding the procedures in contested cases in which the director of the department's Motor Carrier Division, rather than the board, is the final order authority.

Subchapter E. Contested Cases Referred to SOAH

A proposed amendment to §224.150(a) would add a reference to proposed new §224.294, relating to suspension, revocation, or cancellation of authorization under Transportation Code, §545.459 to operate one or more automated motor vehicles. The proposed amendments to §224.150(a) would modify the scope of Subchapter E of Chapter 224 to include contested cases involving authorizations to operate autonomous vehicles. This change is necessary to implement SB 2807 because

Transportation Code, §545.459(k) states that an authorization holder who is aggrieved by an action of the department under Transportation Code, §545.459(h) may submit a written request for a hearing at SOAH. Also, Transportation Code, §545.459(l) states that the contested case provisions of Government Code, Chapter 2001 apply to a proceeding under Transportation Code, §545.459(k).

A proposed amendment to §224.150(c) would add a reference to new Subchapter I of Chapter 224, regarding procedures in contested cases when the board is not the final order authority. The language in current Subchapter F regarding board procedures in contested cases includes certain terms, such as "board chair," as well as certain references, such as a reference to a board meeting under 43 TAC §206.22, that do not apply to the final order authority of the department's Motor Carrier Division Director under this chapter or Transportation Code, Chapter 643. Proposed new Subchapter I would include modified language from current Subchapter F to address the procedures in contested cases when the board is not the final order authority, so it is necessary to propose amendments to §224.150(c) to reference proposed new Subchapter I of Chapter 224.

A proposed amendment to §224.152(a) would implement SB 2807 by adding a reference to Transportation Code, §545.459(k) regarding the department's requirement to refer contested cases to SOAH when an authorization holder timely submits a written request for a hearing.

Proposed amendments to §224.164(d) would authorize a party to a contested case to raise an issue regarding a final proposal for decision before the department's Motor Carrier Division Director during oral presentation at a special public meeting, if any, under proposed new Subchapter I of Chapter 224. This would allow parties in contested cases that are decided by the department's Motor Carrier Division Director the same right to raise issues with a final proposal for decision as parties in a case decided by the board if a special public meeting is held.

Proposed amendments to §224.166(b) and (d) would refer to the department's Motor Carrier Division Director under Chapter 224, and a proposed amendment to §224.166(d) would refer to proposed new Subchapter I of Chapter 224 regarding the transfer of jurisdiction from SOAH to the person with final order authority. These changes are necessary to create similar processes for contested cases decided by a final order authority as already exist for cases decided by the board.

Subchapter F. Board Procedures in Contested Cases

A proposed amendment to §224.190 would clarify that Subchapter F does not apply to a contested case in which a SOAH administrative law judge has submitted a final proposal for decision for consideration by the department in a case in which the department's Motor Carrier Division Director is the final order authority as provided in proposed new §224.310. Although the department's Motor Carrier Division Director is a board delegate under Chapter 224 for certain contested cases, Subchapter I of this title (relating to Motor Carrier Division Director Procedures in Contested Cases) governs the procedures for certain contested cases in which the department's Motor Carrier Division Director is the final order authority.

A proposed amendment to §224.194 would remove subsection (b) because the executive director, rather than the board, delegated final order authority to the department's Motor Carrier Division Director for contested cases under Transportation Code, Chapter 643. Also, proposed new Subchapter I would include language regarding a special public meeting during which the department's Motor Carrier Division Director may review a contested case for which that director is the final order authority. A proposed amendment to §224.194 would also remove the subsection letter for current subsection (a) due to the proposed deletion of subsection (b).

Proposed amendments to §§224.198, 224.200, and 224.204 would implement SB 2807 by adding a reference to the scope of the board's authority to act under Transportation Code, §545.459(k). Proposed amendments to §§224.198, 224.200, and 224.204 would also modify language and punctuation due to the proposed reference to Transportation Code, §545.459(k). In addition, a proposed amendment to §224.200(a) would correct a grammatical error by changing the word "Chapter" to "Chapters."

Subchapter H. Automated Motor Vehicle Authorizations

Proposed amendments would implement SB 2807 by adding new Subchapter H regarding automated motor vehicle authorization under Transportation Code, §545.456 and §545.459. Proposed new §224.290 would provide the purpose and scope of proposed new Subchapter H for clarity.

Proposed new §224.292 would provide the procedures, authority, and requirements regarding the suspension, revocation, or cancellation of an authorization under Transportation Code, §545.456(f), as well as the rescission of a suspension, revocation, or cancellation under Transportation Code, §545.456(g). A determination under Transportation Code, §545.456(f) is not a contested case under Government Code, Chapter 2001, according to Transportation Code, §545.456(h), so proposed new §224.292(a) would state that no other section in Chapter 224 applies to this section, other than §224.290 regarding the purpose and scope of Subchapter H. Proposed new §224.292(b) and (c) would require the department to notify the authorization holder of certain actions by email because the word "immediately" in Transportation Code, §545.456(f) and the word "promptly" in Transportation Code, §545.456(g) require these processes to be done quickly. Proposed new §224.292(b) and (c) would also state that the action or the recission, respectively, is effective when the notice is emailed by the department to avoid any delay to the process that mail might cause. Proposed new §224.292(d) would require the department to also mail the notification to the authorization holder by first-class mail to ensure that the authorization holder received notice. Proposed new §224.292(e) grants the department's Motor Carrier Division Director the authority to decide suspensions, revocations and cancellations under Transportation Code, §545.456(f) and the recissions of those same decisions under Transportation Code, §545.456(g). Proposed new §224.292(f) and (g) clarify requirements for computation of time, aligning them with the requirements of Government Code, §311.014 and defining the unit of measurement as calendar days rather than business days.

Proposed new §224.292(h) and §224.294(l) would clarify that a reference in rule or in a department communication to an "authorization holder" whose authorization is currently suspended, revoked, or cancelled does not rescind or invalidate the suspension, revocation, or cancellation of the authorization. Transportation Code, §545.456(d) states that an authorization does not expire, and it remains active unless suspended, revoked, or canceled by the department. Also, Transportation Code, §545.459(k) refers to an "authorization holder," even though the authorization has been suspended, revoked, or

cancelled under subsection (h). In addition, the suspension, revocation, or cancellation of an authorization may be rescinded under Transportation Code, §545.456(g) and §545.459(j).

Proposed new §224.294 would implement SB 2807 by providing the procedures, authority, and requirements regarding the suspension, revocation, or cancellation of an authorization under Transportation Code, §545.459, as well as the imposition of one or more restrictions on the operation of the automated motor vehicle under Transportation Code, §545.459. Proposed new §224.294(a) would state which subchapters in Chapter 224 apply to contested cases before SOAH and the board or the department's Motor Carrier Division Director brought under Transportation Code, §545.459.

Proposed new §224.294(b) would specify that the notice of intent to sanction, required by Transportation Code, §545.459(a) and (c) shall be sent by certified mail, return receipt requested so that it can also serve as the notice to a licensee of an intended suspension, revocation, or cancellation required by Government Code, §2001.054. Proposed new §224.294(b) would also require the department to send the notice of intent by email to the authorization holder's email address on file in the department's designated system, so the authorization holder receives notice as quickly as possible due to public safety concerns as described in Transportation Code, §545.459(a) and (b).

Proposed new §224.294(c) would require the authorization holder to submit any request for an extension on the department's deadline for corrective action and certification under Transportation Code, §545.459(c)(2) and (e) to be submitted prior to the department's deadline listed in the department's notice of intent. Proposed new §224.294(c) would also require the authorization holder's request for an extension to include an explanation regarding why the department's deadline is not reasonable, why the authorization holder needs more time (including the specific deadline the authorization holder is requesting), and whether the authorization holder's requested deadline is likely to result in harm to the public health, safety, or welfare. Automated motor vehicles are a new and evolving technology. The authorization holder is in the best position to know about the automated motor vehicles that it operates and the automated motor vehicle industry in general. The authorization holder is in the best position to articulate its reasons for an extension on the department's deadline. A request for an extension after the deadline has passed is not a reasonable request under Transportation Code, §545.459(e). The department will only send a notice of intent if the department determines that an authorization holder's automated motor vehicle is not in safe operational condition and the operation of the vehicle on a highway or street in Texas endangers the public. When determining whether an authorization holder's request for an extension is reasonable, the department must consider the public health, safety, and welfare. Although the department will consider the nature of the issues the authorization holder must correct, it is incumbent on the authorization holder to timely request an extension.

Proposed new §224.294(d) would require the department to send notice to the authorization holder of a decision that suspended, revoked, or cancelled the authorization or imposed a restriction on the operation of the automated motor vehicle by both email and first-class mail, to ensure that the authorization holder is as likely as possible to actually receive the notice. The date of the decision issuance would be the date the department sends the email, to avoid any delay or uncertainty that might arise from waiting for the arrival of the regular mail. Proposed new §224.294(e) would specify that the department will designate the address for the authorization holder to submit requests under Transportation Code, §545.459 to extend the compliance period, for review of the decision, for removal or recission of a sanction, or for a hearing. This will allow the department flexibility in determining how best to staff and monitor communications with authorization holders.

Proposed new §224.294(f) would allow the department to request proof that a representative has authority to represent the authorization holder, to prevent confusion, miscommunication, or fraud. Proposed new §224.294(g) would require authorization holders to electronically file certifications under Transportation Code, §545.459(d) by following the requirements of §224.11, relating to Filing and Service of Documents, to ensure uniform evidence of when and what was filed, as well as service to all parties involved.

Proposed new §224.294(h) would make the department's Motor Carrier Division Director the decision authority for determinations under Transportation Code, §545.459(g). Proposed new §224.294(i) would also make the Motor Carrier Division Director the decision authority for final determinations under Transportation Code, §545.459(h) following a timely request to review the decision, similar to the exceptions process under Government Code, §2001.062 and SOAH rules. Proposed new §224.294(j) would make the department's board the final order authority for contested cases under Transportation Code, §545.459(k) when the SOAH administrative law judge issued a proposal for decision, but would empower the Motor Carrier Division Director to make decisions regarding the recission of a sanction or the removal of a restriction under Transportation Code, §545.459(j) to allow for faster decision-making in those situations without the need to call a public meeting of the board.

Proposed new §224.294(k) would set the process the department will follow to dismiss the case and notify the authorization holder if the SOAH hearing is not held within 60 days of the Motor Carrier Division Director's final determination under Transportation Code, §545.459(h). Notice would be sent by email for expediency in that situation. Proposed new §224.294(m) would exempt certifications or communications regarding a recission or removal of a sanction under Transportation Code, §545.459(j) from the filing requirements of §224.11(a) through (g), relating to Filing and Service of Documents, so that the authorization holder could simply send the documents and request to the designated email address, as prescribed by proposed new §224.294(e), to make the process as efficient and expedited as possible.

Subchapter I. Motor Carrier Division Director Procedures in Contested Cases

Proposed amendments would add new Subchapter I regarding contested cases for which the department's director of the Motor Carrier Division is the final order authority, rather than the board. Proposed new Subchapter I would include modified language from current Subchapter F, which addresses board procedures in contested cases. Proposed new §224.310 would provide the purpose and scope of proposed new Subchapter I.

Proposed new §224.312 would provide an overview of the process for the contested case review by the department's final order authority, including the final order authority's discretion to schedule a special public meeting to review the contested case. Public meetings may be appropriate in matters of great public interest that do not require expedited decisions, but they will

be inappropriate when a decision is routine or must be made quickly to protect public health or safety.

Proposed sections throughout proposed new Subchapter I regarding a special public meeting would only apply if the department's final order authority schedules a special public meeting. Proposed new §224.314 would provide the procedure and deadlines regarding a request for oral presentation, if there is a special public meeting. Proposed new §224.314(a) would require the department to provide notice by email to the parties 20 days before a special public meeting, to allow the parties time to prepare any oral presentations and written materials for the special public meeting. Proposed new §224.314(b) would require a party to notify the department and all other parties of its intent to make an oral presentation at least seven days in advance of the meeting, to allow both the parties and the department time to prepare accordingly. Proposed new §224.314(c) would allow parties that are not affected by the proposal for decision to have flexibility to agree to the order of their presentations, but would set the order of presentations in proposed new §224.320, relating to Order of Oral Presentations to the Final Order Authority, as the default order if the parties do not file their agreed order of presentations at the same time they file their intent to make oral presentation under proposed new §224.314(b). Proposed new §224.314(d) would clarify that a party that fails to make a timely written request for oral presentation under proposed new §224.314(b) will not be allowed to present at the special public meeting, to ensure predictability in procedure during the meeting and an opportunity for all parties to prepare in advance of the meeting. Proposed new §224.314(e) would specify that there would be no public comment at special public meetings and that non-parties would not be allowed to give oral presentations. This would prevent extraneous information that is not in the SOAH record from influencing the final order authority in violation of Government Code, Chapter 2001, and would allow for more efficient meetings.

Proposed new §224.316 would provide the procedure and deadline for the provision of written materials for a special public meeting. Proposed new §224.316(a) would require a party that wants to provide written materials to the final order authority at a special public meeting to file them with the department at least 14 days prior to the meeting and provide copies to the other parties. This would allow both the parties and the department adequate time to prepare in advance of the special meeting. Proposed new §224.316(b) would specify that written materials can only contain information from the SOAH record, so as to avoid exposing the final order authority to information that is not in the SOAH record from influencing the final order authority in violation of Government Code, Chapter 2001. Similarly, proposed new §224.316(e) would specify that non-parties are not authorized to provide written materials, to prevent extraneous information that is outside the SOAH record from influencing the final order authority. Proposed new §224.316(c) would require the parties to provide citations to the SOAH record for all written materials, so that the parties and the department can verify that the written materials are all within the SOAH record. Proposed new §224.316(d) would set size, font, and page count limitations for the written materials, to require parties to streamline their documentary presentations so that the presentations during the special public meeting are both efficient and effective.

Proposed new §224.318 would provide the requirements for an oral presentation at a special public meeting. Proposed new §224.318(a) would limit oral presentations to information within the SOAH record and to the scope of the final order authority's powers under Government Code, §2001.058(e), so as to prevent the final order authority from violating Government Code, Chapter 2001 by relying on evidence that is not in the record or taking action that is not within the department's jurisdiction. Proposed new §224.318(b) would allow a party during oral presentation to recommend that the final order authority remand the case to SOAH, to the extent allowed under the SOAH rules in 1 TAC Chapter 155 and Government Code, Chapter 2001. Remand to SOAH can be necessary when the administrative law judge failed to make findings regarding specific allegations. Proposed new §224.318(c) would require the parties to object when another party goes outside the SOAH record, so that the final order authority will be able to identify and disregard information that is outside the record. Proposed new §224.318(d) would set a 15-minute time limit for each party's oral presentation, clarify that additional rebuttal statements or a closing statement are not allowed, and clarify that time spent responding to questions or making objections does not count against the 15 minutes. These guidelines would ensure that oral presentations in special public meetings proceed efficiently but fairly.

Proposed new §224.320 would provide the order of presentation for an oral presentation at a special public meeting. Proposed new §224.320(a) would require the department to provide a presentation of the procedural history and summary of the contested case. Proposed new §224.320(b) would require that the adversely affected party present first, but allows the final order authority to determine the order of presentations if it is not clear which party is adversely affected or if it appears that there is more than one adversely affected party. This would parallel the current order of presentation for parties making an oral presentation at board meetings under §224.202, regarding Order of Oral Presentations to the Board. Proposed new §224.320(c) would require the parties that are not adversely affected to present in alphabetical order, assuming they had not previously agreed to an order under proposed new §224.314.

Proposed new §224.322 would describe the final order authority's conduct and the limits on any discussions when reviewing a contested case. Proposed new §224.322(a) would specify the legal limitations of the final order authority's review. Proposed new §224.322(b) would allow the final order authority to ask the parties questions, but only within the relevant legal limitations. Proposed new §224.322(c) would allow the final order authority to use personal expertise in the industry in deciding a contested case, but only within the relevant legal limitations. Proposed new §224.322 would provide clarity and ease of reference for parties and the final order authority alike regarding the laws that apply to and limit the final order authority's review of the proposal for decision.

Proposed new §224.324 would provide the requirements regarding a final order issued by the department's director of the Motor Carrier Division under proposed new Subchapter I. Proposed new §224.324(a) would require that the final decision from the final order authority be in writing and signed, in keeping with the requirements of Government Code, §2001.141(a). Proposed new §224.324(b) would require the department to email and send by certified mail the final order to the parties in the contested case, to maximize the opportunities for the parties to receive notice of the decision and allow the department to ascertain whether and on what date an impacted party received the decision for purposes of Government Code, §2001.142(c). Proposed new §224.324(c) and (d) would clarify that the Government Code governs the issuance of a final order by the final order authority, the parties' motions for rehearing, and when the decision becomes final.

Proposed new §224.326 would address public access to a special public meeting. Proposed new §224.326 would contain modified versions of portions of 43 TAC §206.22, regarding Public Access to Board Meetings, which only applies to board meetings. Proposed new §224.326(a) would require persons in need of special accommodations who plan to attend the special public meeting to send a request to the department two days in advance, to allow the department time to arrange the accommodation. Proposed new §224.326(b) would specify that members of the public may not question parties or the final order authority in a contested case, to maintain decorum in the meeting and to avoid exposing the final order authority to information that is outside the SOAH record. Proposed new §224.326(c) would require a person who disrupts a special public meeting to leave the premises, to maintain decorum and safety in the meeting.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the amendments and new sections will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Corrie Thompson, Director of the Enforcement Division (ENF), has determined that there will be no significant impact on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Ms. Thompson has also determined that, for each year of the first five years that the amended and new sections are in effect, there is an anticipated public benefit because the proposal provides clarity for the regulated industries that are governed by these provisions, and negligible associated costs to comply.

Anticipated Public Benefits. The public benefit anticipated as a result of the proposal includes clarity for the regulated industries regarding the procedures, requirements, and restrictions regarding the matters governed by this proposal.

Anticipated Costs to Comply with the Proposal. Ms. Thompson anticipates that there will be no significant costs to comply with this proposal. The department has drafted the rules so as to eliminate cost by allowing authorization holders to use online document filing and email as service for requests rather than mail.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by Government Code, §2006.002, the department has determined that the proposed new sections and amendments will not have an adverse economic effect on small businesses, micro-businesses, and rural communities because the requirements are minimal. Therefore, the department is not required to prepare a regulatory flexibility analysis under Government Code, §2006.002.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed amendments and new sections are in effect, a government program would be created to implement Senate Bill 2807. Implementation of the proposed amendments and new sections would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or an increase or decrease of fees paid to the department. The proposed amendments and new sections create new regulations to implement Senate Bill 2807, and expand an existing regulation to provide the procedures in certain contested cases for which the director of the department's Motor Carrier Division is the final order authority, rather than the board. The proposed rules would not limit or repeal regulations. Lastly, the proposed amendments and new sections do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

SUBCHAPTER A. GENERAL PROVISIONS

43 TAC §§224.1, 224.5, 224.27, 224.29

STATUTORY AUTHORITY. The department proposes amendments under Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.005, which authorizes the board by rule to delegate any power relating to a contested case, including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed amendments would implement Transportation Code, Chapter 545, Subchapter J; §1002.001, and §1003.005; and Government Code, Chapter 2001.

§224.1. Purpose and Scope.

This subchapter describes the procedures by which the department will adjudicate a contested case arising under Occupations Code, Chapters 2301 or 2302; [~~, or~~] Transportation Code, Chapters 502, 503, 621-623, 643, 645, or 1001-1005; or Transportation Code, §545.459(k), consistent with the requirements of Government Code, Chapter 2001. Unless expressly excluded or limited, this subchapter applies to every contested case in which the department has jurisdiction.

§224.5. Prohibited Communication.

(a) No person, party, attorney of record, or authorized representative in any contested case shall violate Government Code, §2001.061 by directly or indirectly engaging in ex parte communication concerning a contested case with an ALJ, board member, board delegate, final order authority, or a hearings examiner assigned to

render a decision or make findings of fact and conclusions of law in a contested case.

(b) Unless prohibited by Government Code, §2001.061, department staff who did not participate in the hearing may advise a board member, a board delegate, a final order authority, or a hearings examiner, regarding a contested case and any procedural matters.

(c) Department staff shall not recommend a final decision to the board unless the department is a party to the contested case.

(d) A violation of this section shall be promptly reported to the board chair or chief hearings examiner, as applicable, and the general counsel of the department.

(e) The general counsel shall ensure that a copy or summary of the ex parte communication is included with the record of the contested case and that a copy is forwarded to all parties or their authorized representatives.

(f) The general counsel may take any other appropriate action otherwise provided by law.

§224.27. Final Order; Motion for Rehearing.

(a) The provisions of Government Code, Chapter 2001, Subchapter F, govern the issuance of a final order issued under this subchapter and a motion for rehearing filed in response to a final order.

(b) Except as provided by subsection (c) of this section and §224.29 of this title (relating to Delegation of Final Order Authority), the board has final order authority in a contested case filed under Occupations Code, Chapters 2301 or 2302; [, ~~or under~~] Transportation Code, Chapters 502, 503, 621-623, 643, 645, and 1001-1005; or Transportation Code, §545.459(k).

(c) The hearings examiner has final order authority in a contested case filed under Occupations Code, §2301.204 or Occupations Code Chapter 2301, Subchapter M.

(d) A department determination and action denying access to the license plate system becomes final within 26 days of the date of the notice denying access to a database, unless the dealer:

(1) requests a hearing regarding the denial of access, or

(2) enters into a settlement agreement with the department.

(e) Unless a timely motion for rehearing is filed with the appropriate final order authority as provided by law, an order shall be deemed final and binding on all parties. All administrative remedies are deemed to be exhausted as of the effective date of the final order.

(f) If a timely motion for rehearing is not filed, the final order shall be deemed final and binding in accordance with the provisions of Government Code, §2001.144.

(g) If a final and binding order includes an action on a license, the department may act on the license on the date the final order is deemed final and binding, unless the action is stayed by a court order.

§224.29. Delegation of Final Order Authority.

(a) In accordance with Occupations Code, §2301.154(c) and Transportation Code, §1003.005(b), except as provided by subsection (b) of this section, the director of the division that regulates the distribution and sale of motor vehicles is authorized to issue, where there has not been a decision on the merits, a final order in a contested case under Subchapters B and C, including, but not limited to a contested case resolved:

(1) by settlement;

(2) by agreed order;

(3) by withdrawal of the complaint;

(4) by withdrawal of a protest;

(5) by dismissal for want of prosecution including:

(A) failure of a complaining or protesting party to participate in scheduling mediation or to appear at mediation as required under Subchapter C of this chapter (relating to Contested Cases Between Motor Vehicle Industry License Holders or Applicants);

(B) failure of a complaining or protesting party to respond to department requests for information or scheduling matters;

(C) failure of a complaining or protesting party to dismiss a contested case that has been resolved by the parties;

(6) by dismissal for want of jurisdiction;

(7) by summary judgment or summary disposition;

(8) by default judgment; or

(9) when a party waives opportunity for a contested case hearing.

(b) In accordance with Occupations Code, §2301.704 and §2301.711, a hearings examiner is authorized to issue a final order in a contested case brought under Occupations Code, §2301.204 or §§2301.601-2301.613.

(c) In accordance with Transportation Code, §1003.005, the director of the department's Motor Carrier Division is delegated [~~any power relating to a contested case, including~~] the authority to issue a final order[,] in contested cases under Subchapter D of this chapter to the extent that delegation of such authority is not already provided under Transportation Code, §643.001(2). [~~by statute.~~]

(d) In accordance with Transportation Code, §1003.005, the director of the department's Motor Carrier Division is authorized to issue a final order in a contested case under §224.294 of this title (relating to Suspension, Revocation, or Cancellation of Automated Motor Vehicle Authorization under Transportation Code, §545.459) when:

(1) a SOAH ALJ has not submitted a proposal for decision to the department for consideration by the final order authority; or

(2) a SOAH ALJ submits a proposal for decision regarding a default proceeding to the department for consideration by the final order authority.

(e) [~~(d)~~] In a contested case in which the board has delegated final order authority under subsection (a), (c) or (d) [~~or (c)~~] of this section, a motion for rehearing shall be filed with and decided by the final order authority delegate.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER D. MOTOR CARRIER AND OVERSIZE OR OVERWEIGHT VEHICLE OR LOAD ENFORCEMENT

43 TAC §224.110

STATUTORY AUTHORITY. The department proposes amendments under Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §502.0021, which authorizes the department to adopt rules to administer Transportation Code, Chapter 502; Transportation Code, §502.091(b), which authorizes the department to adopt and enforce rules to carry out IRP; Transportation Code, §621.008, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 621; Transportation Code, §622.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 622; Transportation Code, §623.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 623; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §643.2526, which authorizes an applicant to appeal the denial of an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643, and which authorizes a motor carrier to appeal the revocation or suspension of a registration or placement on probation of the motor carrier as requested by the Texas Department of Public Safety under Transportation Code, §643.252(b); Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.001, which states that the department is subject to Government Code, Chapter 2001, except as specifically provided by law; Transportation Code, §1003.005, which authorizes the board by rule to delegate any power relating to a contested case, including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed amendments would implement Government Code, Chapter 2001; and Transportation Code, Chapters 502, 621, 622, 623, 643, and 645; Transportation Code, §§1002.001, 1003.001, and 1003.005.

§224.110. Purpose and Scope.

This subchapter and Subchapters A, E, and I [F] of this chapter describe the procedures by which the department will adjudicate alleged violations and claims under Transportation Code, Chapters 502, 621-623, 643, and 645. These contested cases involve registrants under the International Registration Plan, motor carriers, motor carrier leasing businesses, motor transportation brokers, and household goods carriers. Contested cases involving persons operating oversize or overweight vehicles or moving oversize or overweight loads are also included.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER E. CONTESTED CASES REFERRED TO SOAH

43 TAC §§224.150, 224.152, 224.164, 224.166

STATUTORY AUTHORITY. The department proposes amendments under Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §502.0021, which authorizes the department to adopt rules to administer Transportation Code, Chapter 502; Transportation Code, §502.091(b), which authorizes the department to adopt and enforce rules to carry out IRP; Transportation Code, §621.008, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 621; Transportation Code, §622.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 622; Transportation Code, §623.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 623; Transportation Code, §623.271, which states that the notice and hearing requirements under Transportation Code, §643.2525 apply to the imposition of an administrative penalty or the revocation of a permit under §623.271; Transportation Code, §623.272, which states that the notice and hearing requirements under Transportation Code, §643.2525 apply to the imposition of an administrative penalty under §623.272; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §643.2525, which provides the process for an administrative hearing under Transportation Code, Chapter 643; Transportation Code, §643.2526, which authorizes an applicant to appeal the denial of an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643, and which authorizes a motor carrier to appeal the revocation or suspension of a registration or placement on probation of the motor carrier as requested by the Texas Department of Public Safety under Transportation Code, §643.252(b); Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.001, which states that the department is subject to Government Code, Chapter 2001, except as specifically provided by law; Transportation Code, §1003.005, which authorizes the board by rule to delegate any power relating to a contested case, including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed amendments would implement Transportation Code, Chapter 545, Subchapter J; Transportation Code, Chapters 621, 622, 623,

643, and 645; Transportation Code, §§502.091(b), 1002.001, 1003.001, and 1003.005; and Government Code, Chapter 2001.

§224.150. Purpose and Scope.

(a) This subchapter describes department practice and procedures for referring a contested case to SOAH for a hearing, including a contested case under Subchapter B (relating to Motor Vehicle, Salvage Vehicle, and Trailer Industry Enforcement), Subchapter C (relating to Contested Cases Between Motor Vehicle Industry License Holders or Applicants), and Subchapter D (Motor Carrier and Oversize or Overweight Vehicle or Load Enforcement) of this chapter, as well as §224.294 of this title (relating to Suspension, Revocation, or Cancellation of Automated Motor Vehicle Authorization under Transportation Code, §545.459).

(b) When SOAH accepts a referral from the department, jurisdiction of the contested case transfers to SOAH, and practice and procedure in contested cases heard by SOAH are addressed in:

(1) 1 TAC Chapter 155, and

(2) subchapter A and this subchapter, where not in conflict with SOAH rules.

(c) When SOAH disposes of a contested case, jurisdiction transfers from SOAH back to the department. The department will issue a final order under §224.29 of this title (relating to Delegation of Final Order Authority), [~~or~~] under Subchapter F of this chapter (relating to Board Procedures in Contested Cases), or under Subchapter I of this chapter (relating to Motor Carrier Division Director Procedures in Contested Cases).

§224.152. Referral to SOAH.

(a) The department shall refer contested cases to SOAH upon determination that a hearing is appropriate under Occupations Code, Chapter 2301 or 2302; [~~,~~ ~~or~~] Transportation Code, Chapters 502, 503, 621-623, 643, 645, or 1001-1005; or Transportation Code, §545.459(k), including contested cases relating to:

(1) an enforcement complaint on the department's own initiative;

(2) a notice of protest that has been timely filed in accordance with §215.106 of this title (relating to Time for Filing Protest);

(3) a protest filed under Occupations Code, §2301.360 or a protest or complaint filed under Occupations Code, Chapter 2301, Subchapters I or J;

(4) a department-issued cease and desist order; or

(5) any other contested matter that meets the requirements for a hearing at SOAH.

(b) The department will follow SOAH procedures to file a Request to Docket Case and related documents and request a setting of a hearing.

(c) SOAH will provide the department with the date, time, and place of the initial hearing.

§224.164. Issuance of a Proposal for Decision.

(a) After a hearing on the merits, the ALJ shall submit a proposal for decision in a contested case to the department and all parties.

(b) The parties may submit to the ALJ exceptions to the proposal for decision and replies to exceptions to the proposal for decision in accordance with the SOAH rules.

(c) The ALJ will review all exceptions and replies and notify the department and parties whether the ALJ recommends any changes to the proposal for decision.

(d) The parties are not entitled to file exceptions or briefs in response to a final [~~an amended~~] proposal for decision but may raise an issue regarding the final proposal for decision before the following:

(1) the board as allowed at the time of oral presentation under Subchapter F of this chapter; or

(2) the final order authority as allowed at the time of an oral presentation at a special public meeting, if any, under Subchapter I of this chapter (relating to Motor Carrier Division Director Procedures in Contested Cases).

§224.166. Transfer of Jurisdiction for Final Decision.

(a) A party may appeal an interlocutory order issued under Occupations Code, Chapter 2301 to the board under §224.192 of this title (relating to Appeal of an Interlocutory Order). SOAH retains jurisdiction on all other pending matters in the contested case, except as provided otherwise in this chapter.

(b) If a contested case includes a hearing on the merits, SOAH's jurisdiction transfers to the board or other final order authority when the ALJ confirms that the proposal for decision is final.

(c) Once jurisdiction transfers, no new testimony, witnesses, or information may be considered by the board or board delegate with final order authority.

(d) After SOAH transfers the SOAH administrative record to the department, the board or the department's director of the Motor Carrier Division [~~or board delegate with final order authority~~] will consider the contested case under the provisions of Subchapter F of this chapter (relating to Board Procedures in Contested Cases) or Subchapter I of this chapter (relating to Motor Carrier Division Director Procedures in Contested Cases).

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER F. BOARD PROCEDURES IN CONTESTED CASES

43 TAC §§224.190, 224.194, 224.198, 224.200, 224.204

STATUTORY AUTHORITY. The department proposes amendments under Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.001, which states that the department is subject to Government Code, Chapter 2001, except as specifically provided by law; Transportation Code, §1003.005, which authorizes the board by rule to delegate any power relating to a contested case,

including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed amendments would implement Transportation Code, Chapter 545, Subchapter J; Transportation Code, §§1002.001, 1003.001, and 1003.005; and Government Code, Chapter 2001.

§224.190. Purpose and Scope.

This subchapter describes procedures for the board to review and issue a final order in a contested case in which:

(1) a SOAH ALJ has submitted a final proposal for decision for consideration by the board or board delegate with final order authority, except as stated otherwise in §224.310 of this title (relating to Purpose and Scope),

(2) a party has appealed an interlocutory cease-and-desist order issued by an ALJ, or

(3) a party affected by a statutory stay order issued by an ALJ requested a hearing to modify, vacate, or clarify the extent and application of the statutory stay order.

§224.194. Contested Case Review.

[~~(a)~~] After SOAH submits a final proposal for decision and transfers SOAH's administrative record to the department, the board has jurisdiction and the record required to issue a final order and will review the contested case during the public session of a board meeting, in accordance with the APA.

[~~(b) For a contested case in which the board has delegated final order authority to the Director of the Motor Carrier Division, a special public meeting may be scheduled.~~]

§224.198. Written Materials and Evidence.

(a) If a party wants to provide written materials at the board meeting, the party must provide the written materials to the department and all other parties in accordance with §224.11 of this title (relating to Filing and Service of Documents) at least 21 days prior to the date of the board meeting. If a party fails to timely provide written materials to the department or any other party, the department shall not provide the written materials to the board and the party shall not provide the written materials to the board at the board meeting. Non-parties are not authorized to provide written materials to the board.

(b) For the purposes of this section, written materials are defined as language or images including photographs or diagrams, that are contained in the SOAH administrative record and recorded in paper form except as stated otherwise in this subsection. The language or images in the written materials must be taken without changes from the SOAH administrative record; however, proposed final orders and draft motions for possible board action are allowed to be included in a party's written materials even if they contain arguments or requests that are not contained in the SOAH administrative record. Written materials shall be limited to evidence contained in the SOAH administrative record and consistent with the scope of the board's authority to act under Government Code, §2001.058(e); [~~and~~] Occupations Code, Chapters 2301 and 2302; [~~, and~~] Transportation Code, Chapters 502, 503, 621-623, 643, 645, or 1001-1005; and Transportation Code, §545.459(k), as applicable.

(c) All information in the written materials shall include a citation to the SOAH administrative record on all points to specifically identify where the information is located. The citations may be provided in an addendum to the written materials that is not counted against the 15-page limit under subsection (d) of this section; however, the addendum must not include any information other than a heading that lists the name of the party, the caption for the contested case, and text that lists the citations and page numbers.

(d) Written materials shall be 8.5 inches by 11 inches and single-sided. Written materials must be double-spaced and at least 12-point type if in text form. Written materials are limited to 15 pages per party. If a party provides the department with written materials that contain more pages than the maximum allowed, the department shall not provide the written materials to the board and a party shall not provide the written materials to the board at the board meeting.

§224.200. Oral Presentation Limitations and Responsibilities.

(a) A party to a contested case under review by the board shall limit oral presentation and discussion to evidence in the SOAH administrative record. Also, oral presentation and discussion shall be consistent with the scope of the board's authority to act under Government Code, §2001.058(e); Occupations Code, Chapters 2301 and 2302; [~~and~~] Transportation Code Chapters [~~Chapter~~] 502, 503, 621-623, 643, 645, or 1001-1005; and Transportation Code, §545.459(k), as applicable.

(b) A party may argue that the board should remand the contested case to SOAH.

(c) Each party is responsible for objecting when another party attempts to make arguments or engage in discussion regarding evidence that is not contained in the SOAH administrative record.

(d) A party's presentation to the board is subject to the following limitations and conditions:

(1) Each party shall be allowed a maximum of 15 minutes for their oral presentation. The board chair may increase this time.

(2) No party is allowed to provide a rebuttal or a closing statement.

(3) An intervenor of record from the SOAH proceeding supporting another party shall share that party's time.

(4) Time spent by a party responding to a board question is not counted against their presentation time.

(5) During an oral presentation, a party to the contested case before the board may object that a party presented material or argument that is not in the SOAH administrative record. Time spent discussing such objections is not counted against the objecting party's time.

§224.204. Board Conduct and Discussion When Reviewing a Contested Case or Interlocutory Order.

(a) The board shall conduct its contested case review in compliance with Government Code, Chapter 2001; Occupations Code, Chapters 2301 and 2302; [~~and~~] Transportation Code Chapters 502, 503, 621, 623, 643, 645, or 1001-1005; and Transportation Code, §545.459(k), as applicable, including the limitations on changing a finding of fact or conclusion of law made by a SOAH ALJ, and the prohibition on considering evidence outside of the SOAH administrative record.

(b) A board member may question a party or the department on any matter that is relevant to the proposal for decision; however, a question shall be consistent with the scope of the board's authority to take action under Government Code, §2001.058(e); Occupations Code, Chapters 2301 and 2302; [~~and~~] Transportation Code, Chapters 502, 503, 621-623, 643, 645, or 1001-1005; and Transportation Code, §545.459(k), as applicable; a question must be limited to evidence contained in the SOAH administrative record; and the communication

must comply with §224.5 of this title (relating to Prohibited Communication). In considering a contested case, a board member is authorized to ask a question regarding a request to remand the case to SOAH, including a remand to SOAH for further consideration of the evidence.

(c) A board member may use personal expertise in the industry to understand a contested case and make effective decisions, consistent with the scope of the board's authority to act under Government Code, §2001.058(e); Occupations Code, Chapters 2301 and 2302; [~~and~~] Transportation Code Chapters 502, 503, 621-623, 643, 645, or 1001-1005; and Transportation Code, §545.459(k), as applicable. However, a board member is not an advocate for a particular industry. A board member is an impartial public servant who takes an oath to preserve, protect, and defend the Constitution and laws of the United States and Texas.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER H. AUTOMATED MOTOR VEHICLE AUTHORIZATIONS

43 TAC §§224.290, 224.292, 224.294

STATUTORY AUTHORITY. The department proposes new sections under Transportation Code, §545.453, which authorizes the board to adopt rules that are necessary to administer Subchapter J of Chapter 545 of the Transportation Code; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Government Code, §2001.054, which specifies the requirements regarding the grant, denial, renewal, revocation, suspension, annulment, or withdrawal of a license; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.001, which states that the department is subject to Government Code, Chapter 2001, except as specifically provided by law; Transportation Code, §1003.005, which authorizes the board by rule to delegate any power relating to a contested case, including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed new sections would implement Transportation Code, Chapter 545, Subchapter J; Transportation Code, §§1002.001, 1003.001, and 1003.005; and Government Code, Chapter 2001.

§224.290. Purpose and Scope.

This subchapter prescribes the procedures for:

(1) the suspension, revocation, or cancellation of an automated motor vehicle authorization issued under Transportation Code, §545.456;

(2) the imposition of a restriction on the operation of the automated motor vehicle under Transportation Code, §545.459;

(3) the rescission of a suspension, revocation, or cancellation of an automated motor vehicle authorization under Transportation Code, §545.456 or §545.459; and

(4) the removal of a restriction on the operation of the automated motor vehicle under Transportation Code, §545.459.

§224.292. Immediate Suspension, Revocation, or Cancellation of an Automated Motor Vehicle Authorization under Transportation Code, §545.456(f).

(a) No other section in this chapter applies to a suspension, revocation, or cancellation of an automated motor vehicle authorization under Transportation Code, §545.456(f), except for §224.290 of this title (relating to Purpose and Scope).

(b) The department may immediately suspend, revoke, or cancel an automated motor vehicle authorization under Transportation Code, §545.456(f) by sending notice to the authorization holder's email address on file in the department's designated system referenced in §220.23 of this title (relating to Application Requirements). The action described in the notice is effective when the notice is emailed by the department.

(c) The department shall promptly notify the authorization holder of a rescission of a suspension, revocation, or cancellation of an automated motor vehicle authorization under Transportation Code, §545.456(g) by sending notice to the authorization holder's email address on file in the department's designated system referenced in §220.23 of this title. The recission described in the notice is effective when the notice is emailed by the department.

(d) In addition to emailing a notice to the authorization holder under this section, the department shall also mail a notice to an authorization holder by first-class mail using the authorization holder's mailing address on file in the department's designated system referenced in §220.23 of this title.

(e) The director of the department's Motor Carrier Division is authorized to make the decisions under this section regarding a suspension, revocation, cancellation, or rescission.

(f) Any time period prescribed or allowed by this section or by any applicable statute regarding this section shall be computed in accordance with Government Code, §311.014.

(g) Time under this section shall be computed using calendar days rather than business days, unless otherwise specified in statute.

(h) A reference in rule or a department communication to an "authorization holder" whose authorization is currently suspended, revoked, or cancelled does not rescind or invalidate the suspension, revocation or cancellation of the authorization.

§224.294. Suspension, Revocation, or Cancellation of Automated Motor Vehicle Authorization under Transportation Code, §545.459.

(a) Subchapters A, E, F, and I of this chapter apply to a suspension, revocation, or cancellation of an authorization under Transportation Code, §545.459, and the imposition of one or more restrictions on the operation of the automated motor vehicle under Transportation Code, §545.459.

(b) The department shall send the notice of intent required under Transportation Code, §545.459(a) and (c) to the authorization holder by certified mail, return receipt requested consistent with Government Code, §2001.054. The department shall also send the notice of intent to the authorization holder's email address on file in the depart-

ment's designated system referenced in §220.23 of this title (relating to Application Requirements).

(c) Any request for an extension on the department's deadline for corrective action and certification under Transportation Code, §545.459(c)(2) and (e) must be submitted prior to the department's deadline listed in the department's notice of intent and must contain an explanation regarding the following:

(1) why the department's deadline is not reasonable;

(2) why the authorization holder needs more time, and the specific deadline the authorization holder is requesting; and

(3) whether the authorization holder's requested deadline is likely to result in harm to the public health, safety, or welfare.

(d) The department shall promptly provide notice to the authorization holder of the department's action under this section and Transportation Code, §545.459, using the authorization holder's email address on file in the department's designated system referenced in §220.23 of this title, except as otherwise provided by statute or rule, including §224.154 of this title (relating to Notice of Hearing) and §224.206 of this title (relating to Final Orders). The department shall also promptly mail such notice by first-class mail to an authorization holder using the authorization holder's mailing address on file in the department's designated system referenced in §220.23. The date the department emails a decision or final determination is the date the department issues a decision or final determination for the purposes of Transportation Code, §545.459(g), (h), and (i), as applicable.

(e) The authorization holder shall submit any requests to the department under Transportation Code, §545.459 to the designated address listed in the department's notice to the authorization holder.

(f) A representative of an authorization holder may be required to provide written proof to the department of authority to act on behalf of the authorization holder.

(g) An authorization holder shall electronically file any certification under Transportation Code, §545.459(d) in the department's designated system and include an authorized signature on the certification, in accordance with §224.11 of this title (relating to Filing and Service of Documents).

(h) The director of the department's Motor Carrier Division is authorized to issue a decision under Transportation Code, §545.459(g).

(i) The director of the department's Motor Carrier Division shall review the decision and issue a final determination under Transportation Code, §545.459(h) if the authorization holder timely submits a written request to the department for review.

(j) Except as otherwise provided under §224.29 of this title (relating to Delegation of Final Order Authority), the board has final order authority in a contested case under Transportation Code, §545.459(k). However, the director of the department's Motor Carrier Division shall take the actions required under Transportation Code, §545.459(j) regarding the rescission of a suspension, revocation, or cancellation, or the removal of a restriction, regardless of whether the board issued the final order.

(k) If a hearing is not timely held as required by Transportation Code, §545.459(k), the department shall take the following actions:

(1) request the State Office of Administrative Hearings to dismiss the contested case; and

(2) promptly notify the authorization holder that the authorization is automatically reinstated and that any restriction is automatically removed, using the authorization holder's email address on file in the department's designated system referenced in §220.23 of this title.

(l) A reference to an "authorization holder" in rule or department communication whose authorization is currently suspended, revoked, or cancelled does not rescind or invalidate the suspension, revocation, or cancellation of the authorization.

(m) Unless otherwise requested by the department in writing, §224.11(a) through (g) of this title do not apply to a certification or communication from the authorization holder to the department regarding the following under Transportation Code, §545.459(j):

(1) a potential rescission of a suspension, revocation, or cancellation; or

(2) a potential removal of a restriction.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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SUBCHAPTER I. MOTOR CARRIER DIVISION DIRECTOR PROCEDURES IN CONTESTED CASES

43 TAC §§224.310, 224.312, 224.314, 224.316, 224.318, 224.320, 224.322, 224.324, 224.326

STATUTORY AUTHORITY. The department proposes new sections under Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §502.0021, which authorizes the department to adopt rules to administer Transportation Code, Chapter 502; Transportation Code, §502.091(b), which authorizes the department to adopt and enforce rules to carry out IRP; Transportation Code, §621.008, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 621; Transportation Code, §622.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 622; Transportation Code, §623.002, which authorizes the board to adopt rules that are necessary to implement and enforce Transportation Code, Chapter 623; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §643.2525, which addresses the final order issued by the department for a contested case under Transportation Code, Chapter 643; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; Transportation Code, §1003.001, which states that the department is subject to Government Code, Chapter 2001, except as specifically provided by law; Transportation Code, §1003.005, which authorizes the board by rule to delegate

any power relating to a contested case, including the power to issue a final order, to certain department staff; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed new sections would implement Transportation Code, Chapters 621, 622, 623, 643, and 645; Transportation Code, §§502.091(b), 1002.001, 1003.001, and 1003.005; and Government Code, Chapter 2001.

§224.310. Purpose and Scope.

This subchapter describes the procedures for the department's director of the Motor Carrier Division to review and issue a final order in a contested case in which the following conditions are met:

(1) the department's director of the Motor Carrier Division is the final order authority pursuant to a delegation under this chapter or as designated under Transportation Code, §643.001(2); and

(2) a SOAH ALJ has submitted a final proposal for decision for consideration by a person with such final order authority.

§224.312. Contested Case Review.

(a) After SOAH submits a final proposal for decision and transfers SOAH's administrative record to the department, the final order authority has jurisdiction and the record required to issue a final order and will review the contested case in accordance with the APA.

(b) The final order authority may schedule a special public meeting to review the contested case, as specified under this subchapter; however, the final order authority may also review SOAH's administrative record in a contested case and issue a final order without holding a special public meeting. The provisions in this subchapter regarding a special public meeting only apply if the final order authority schedules a special public meeting.

§224.314. Request for Oral Presentation.

(a) At least 20 days prior to the scheduled date of a special public meeting, the department shall notify the parties regarding the opportunity to attend and provide an oral presentation concerning a proposal for decision before the final order authority. The department will deliver notice electronically to the last known email address provided to the department by the party or party's authorized representative in accordance with §224.11 of this title (relating to Filing and Service of Documents).

(b) If a party intends to make an oral presentation at the special public meeting, a party must submit a written request for an oral presentation to the department's contact listed in the notice provided under subsection (a) of this section and copy all other parties in accordance with §224.11 of this title at least seven days prior to the date of the special public meeting at which the party's contested case will be reviewed.

(c) If more than one party was not adversely affected by the proposal for decision, such parties may agree on the order of their presentations in lieu of the order prescribed under §224.320 of this title (relating to Order of Oral Presentations to the Final Order Authority). These parties must submit the agreed order of their presentations along with their requests to make an oral presentation under subsection (b) of this section. The order of presentations will be determined under §224.320 of this title if the parties who were not adversely affected by the proposal for decision do not timely provide the department and the other parties with notice regarding their agreed order of presentation.

(d) If a party timely submits a written request for an oral presentation, that party may make an oral presentation before the final order authority at the special public meeting. If a party fails to submit a written request for an oral presentation timely, that party shall not make an oral presentation at the special public meeting.

(e) Non-parties are not authorized to provide an oral presentation or public comment to the final order authority at a special public meeting.

§224.316. Written Materials and Evidence.

(a) If a party wants to provide written materials at the special public meeting, the party must provide the written materials to the department and all other parties in accordance with §224.11 of this title (relating to Filing and Service of Documents) at least 14 days prior to the date of the special public meeting. If a party fails to timely provide written materials to the department or any other party, the department shall not provide the written materials to the final order authority and the party shall not provide the written materials to the final order authority at the special public meeting. Non-parties are not authorized to provide written materials to the final order authority.

(b) For the purposes of this section, written materials are defined as language or images including photographs or diagrams, that are contained in the SOAH administrative record and recorded in paper form except as stated otherwise in this subsection. The language or images in the written materials must be taken without changes from the SOAH administrative record; however, proposed final orders are allowed to be included in a party's written materials even if they contain arguments or requests that are not contained in the SOAH administrative record. Written materials shall be limited to evidence contained in the SOAH administrative record and consistent with the scope of the final order authority's authority to act under Government Code, §2001.058(e) and the applicable law that governs the subject matter of the contested case, such as Transportation Code, Chapters 621-623, 643, or 645.

(c) All information in the written materials shall include a citation to the SOAH administrative record on all points to specifically identify where the information is located. The citations may be provided in an addendum to the written materials that is not counted against the 15-page limit under subsection (d) of this section; however, the addendum must not include any information other than a heading that lists the name of the party, the caption for the contested case, and text that lists the citations and page numbers.

(d) Written materials shall be 8.5 inches by 11 inches and single-sided. Written materials must be double-spaced and at least 12-point type if in text form. Written materials are limited to 15 pages per party. If a party provides the department with written materials that contain more pages than the maximum allowed, the department shall not provide the written materials to the final order authority and a party shall not provide the written materials to the final order authority at the special public meeting.

(e) Non-parties are not authorized to provide written materials to the final order authority at a special public meeting.

§224.318. Oral Presentation Limitations and Responsibilities.

(a) A party to a contested case under review by the final order authority shall limit oral presentation and discussion to evidence in the SOAH administrative record. Also, oral presentation and discussion shall be consistent with the scope of the final order authority's authority to act under Government Code, §2001.058(e) and the applicable law that governs the subject matter of the contested case, such as Transportation Code, Chapters 621-623, 643, or 645.

(b) A party may argue that the final order authority should remand the contested case to SOAH.

(c) Each party is responsible for objecting when another party attempts to make arguments or engage in discussion regarding evidence that is not contained in the SOAH administrative record.

(d) A party's presentation to the final order authority is subject to the following limitations and conditions:

(1) Each party shall be allowed a maximum of 15 minutes for their oral presentation. The final order authority may increase this time.

(2) No party is allowed to provide a rebuttal or a closing statement.

(3) An intervenor of record from the SOAH proceeding supporting another party shall share that party's time.

(4) Time spent by a party responding to a question from the final order authority is not counted against such party's presentation time.

(5) During an oral presentation, a party to the contested case before the final order authority may object that a party presented material or argument that is not in the SOAH administrative record. Time spent discussing such objections is not counted against the objecting party's time.

§224.320. Order of Oral Presentation to the Final Order Authority.

(a) The department will present the procedural history and summary of the contested case.

(b) The party that is adversely affected may present first. However, the final order authority is authorized to determine the order of each party's presentation if:

(1) it is not clear which party is adversely affected;

(2) it appears that more than one party is adversely affected; or

(3) different parties are adversely affected by different portions of the contested case under review.

(c) The other party or parties not adversely affected will then have an opportunity to make a presentation. If more than one party is not adversely affected, each party will have an opportunity to respond in alphabetical order based on the name of the party in the pleadings in the SOAH administrative record, except as stated otherwise in §224.314 of this title (relating to Request for Oral Presentation).

§224.322. Final Order Authority Conduct and Discussion When Reviewing a Contested Case.

(a) The final order authority shall conduct its contested case review in compliance with Government Code, Chapter 2001; and the applicable law that governs the subject matter of the contested case, such as Transportation Code, Chapters 621-623, 643, or 645, including the limitations on changing a finding of fact or conclusion of law made by a SOAH ALJ, and the prohibition on considering evidence outside of the SOAH administrative record.

(b) The final order authority may question a party or the department on any matter that is relevant to the proposal for decision; however, a question shall be consistent with the scope of the board's authority to take action under Government Code, §2001.058(e) and the applicable law that governs the subject matter of the contested case, such as Transportation Code, Chapters 621-623, 643, or 645; a question must be limited to evidence contained in the SOAH administrative record; and the communication must comply with §224.5 of this title (relating to Prohibited Communication). In considering a contested case, the final order authority is authorized to ask a question regarding a request to remand the case to SOAH, including a remand to SOAH for further consideration of the evidence.

(c) The final order authority may use personal expertise in the industry to understand a contested case and make effective decisions, consistent with the scope of the final order authority's authority to act under Government Code, §2001.058(e) and the applicable law that governs the subject matter of the contested case, such as Transportation Code, Chapters 621-623, 643, or 645.

§224.324. Final Orders.

(a) A final decision or order in a contested case reviewed by the final order authority shall be in writing and shall be signed by the final order authority.

(b) The department shall email a copy of the final order to the parties in the contested case and send a copy of the final order by certified mail, return receipt requested.

(c) The provisions of Government Code, Chapter 2001, Subchapter F govern:

(1) the issuance of a final order issued under this subchapter; and

(2) motions for rehearing filed in response to a final order.

(d) A decision or order in a contested case is final in accordance with Government Code, §2001.144.

§224.326. Public Access to Special Public Meetings.

(a) Persons who have special communication or accommodation needs and who plan to attend a special public meeting may contact the department's contact listed in the posted meeting agenda for the purpose of requesting auxiliary aids or services. Requests shall be made at least two days before a special public meeting. The department shall make every reasonable effort to accommodate these needs.

(b) Members of the public are not authorized to question the parties to the contested case or the final order authority regarding the contested case.

(c) A person who disrupts a special public meeting shall leave the meeting room and the premises if ordered to do so by the final order authority.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502471
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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SUBCHAPTER B. MOTOR VEHICLE, SALVAGE VEHICLE, AND TRAILER INDUSTRY ENFORCEMENT

43 TAC §224.58

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes to amend 43 Texas Administrative Code

(TAC) Subchapter B, Motor Vehicle, Salvage Vehicle, and Trailer Industry Enforcement, §224.58, concerning denial of access to the license plate system. These amendments are necessary to implement Senate Bill (SB) 1902, 89th Legislature, Regular Session (2025), which became effective July 1, 2025. In SB 1902, Section 3, the legislature directed the department to adopt implementing rules by October 1, 2025. Transportation Code, §503.0633(f), as amended by SB 1902, allows the department to deny access to the license plate database if a dealer has been denied access to the temporary tag database under former Transportation Code, §503.0632(f).

EXPLANATION.

As the department transitioned from paper temporary tags to metal license plates on July 1, 2025, in accordance with House Bill 718, 88th Legislature, Regular Session, the temporary tag database has been replaced with the license plate database. Under Transportation Code 503.0633(f), as amended by SB 1902, the department may deny a dealer access to the license plate system if the department determines that the dealer has acted fraudulently. A proposed amendment to §224.58(b) would add denial of access to the temporary tag system as a basis for the department to deny a dealer access to the license plate system. These amendments implement SB 1902, which added this basis as one the department could consider in denying access to the license plate database under Transportation Code, §503.0633(f). The proposed amendment would allow the department to deny access to the license plate system if the dealer had been denied access to temporary tag database prior to July 1, 2025, after providing the dealer with notice.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the amendment will be in effect, there will be no fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Corrie Thompson, Director of the Enforcement Division, has determined that there will be no measurable effect on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the amendment will be in effect, there will be no fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Corrie Thompson, Director of the Enforcement Division, has determined that there will be no measurable effect on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Ms. Thompson has also determined that, for each year of the first five years the amendment is in effect, public benefits include limiting the criminal activity of a small subset of dealers who fraudulently obtain and sell license plates to persons seeking to engage in violent criminal activity, including armed robbery, human trafficking, and assaults on law enforcement, or to persons seeking to criminally operate uninsured and uninspected vehicles as a hazard to Texas motorists and the environment.

Anticipated Costs to Comply with the Proposal. Ms. Thompson anticipates that there will be no costs to comply with this proposed rule as the proposed rule only applies when a dealer's actions indicate fraud.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by Government Code, §2006.002, the department has determined that the proposed amendment will not have an adverse economic effect on small businesses or micro-businesses because the rule does not change the underlying statutory policy-that the department may deny a dealer the ability to issue vehicle registration credentials if the dealer has committed fraud. This fraud prevention tool first applied to temporary tags and will now apply to license plates obtained or issued by a dealer. The amendment will also not have an adverse impact on rural communities because rural communities are not required to hold a general distinguishing number. The proposed amendment does not require small businesses or micro-businesses to pay a fee or incur any new costs to comply with this amendment, as any costs will be the same as those under the existing rule regarding temporary tags. Therefore, the department is not required to prepare a regulatory flexibility analysis under Government Code, §2006.002.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under the Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed amendment is in effect, no government program would be created or eliminated. Implementation of the proposed amendment would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or an increase or decrease of fees paid to the department. The proposed amendment does not create a new regulation and does not expand, limit, or repeal an existing regulation. Lastly, the proposed amendment does not increase the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT. If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to rules@txdmv.gov or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

STATUTORY AUTHORITY. In addition to the rulemaking authority provided in Section 34 of HB 718, the department proposes amendments to §224.58 under Transportation Code, §§503.002, 503.0631, and 1002.001. Transportation Code, §503.002 authorizes the department to adopt rules to administer Transportation Code Chapter 503. Transportation Code, §503.0631(e) authorizes the department to adopt rules and prescribe procedures as necessary to implement §503.0631. Transportation Code, §1002.001 authorizes the board to adopt rules that are necessary and appropriate to implement the powers and the duties of the department.

The department also proposes amendments under Occupations Code, §2301.151, which gives the board authority to regulate the distribution, sale, and lease of motor vehicles and the authority to take any action that is necessary or convenient to exercise that authority; Occupations Code, §2301.152, which authorizes the board to establish the qualifications of license holders, ensure that the distribution, sale, and lease of motor

vehicles is conducted as required by statute and board rules, to prevent fraud, unfair practices, discrimination, impositions, and other abuses in connection with the distribution and sale of motor vehicles, and to enforce and administer Occupations Code, Chapter 2301 and Transportation Code, Chapter 503; Occupations Code, §2301.155, which authorizes the board to adopt rules as necessary or convenient to administer Occupations Code, Chapter 2301 and to govern practice and procedure before the board; and Government Code, §2001.004 requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures.

CROSS REFERENCE TO STATUTE. These proposed revisions implement Government Code, Chapter 2001; Occupations Code, Chapter 2301; and Transportation Code, Chapters 501-504, and 1002.

§224.58. Denial of Dealer Access to License Plate System.

(a) In this section "fraudulently obtained license plates from the license plate system" means misuse by a dealer account user of the license plate system authorized under Transportation Code, §503.063, §503.0631, or §503.065 to obtain or issue:

(1) an excessive number of license plates relative to dealer sales;

(2) a license plate for a vehicle or vehicles not in the dealer's inventory (a vehicle is presumed not to be in the dealer's inventory if the vehicle is not listed in the relevant monthly Vehicle Inventory Tax Statement);

(3) access to the license plate system for a fictitious user or person using a false identity;

(4) a license plate for a vehicle or a motor vehicle when a dealer is no longer operating at a licensed location;

(5) a license plate for a vehicle or a motor vehicle not located at the dealer's licensed location or storage lot; or

(6) a license plate for a vehicle or motor vehicle that is not titled or permitted by law to be operated on a public highway.

(b) The department shall deny a dealer access to the license plate system effective on the date the department sends notice electronically and by certified mail to the dealer that the department has determined, directly or through an account user, that the dealer has fraudulently obtained or issued a license plate in the license plate system or has been denied access to the temporary tag database. A dealer may seek a negotiated resolution with the department by demonstrating the dealer took corrective action or that the department's determination was incorrect.

(c) Notice shall be sent to the dealer's last known mailing address and last known email address in the department-designated licensing system.

(d) A dealer may request a hearing on the denial of access to the license plate system, as provided by Subchapter O, Chapter 2301, Occupations Code. The request must be in writing and the dealer must request a hearing under this section. The department must receive the written request for a hearing within 26 days of the date of the notice denying access to the license plate system. The request for a hearing does not stay the denial of access under subsection (b) of this section. A dealer may continue to seek a negotiated resolution with the department after a request for hearing has been submitted under this subsection by demonstrating the dealer took corrective action or that the department's determination was incorrect.

(e) The department may also issue a Notice of Department Decision stating administrative violations as provided in §224.56 of this title (relating to Notice of Department Decision) concurrently with the notice of denial of access under this section. A Notice of Department Decision may include notice of any violation, including a violation listed under subsection (a) of this section.

(f) A department determination and action denying access to the license plate system becomes final if the dealer does not request a hearing or enter into a settlement agreement with the department within 26 days of the date of the notice denying access to the license plate system.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

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Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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SUBCHAPTER D. MOTOR CARRIER AND OVERSIZE OR OVERWEIGHT VEHICLE OR LOAD ENFORCEMENT

43 TAC §§224.116, 224.121, 224.124

INTRODUCTION. The Texas Department of Motor Vehicles (department) proposes amendments to 43 Texas Administrative Code (TAC) Chapter 224, Subchapter D, Motor Carrier and Oversize or Overweight Vehicle or Load Enforcement, §224.116 and §224.124, and proposes new §224.121, regarding the requirements and procedures under Transportation Code, §643.2526. The proposed amendments and new section are necessary to implement House Bill (HB) 1672, 89th Legislature, Regular Session (2025), which requires that the department adopt rules to create the requirements and procedures for revocation, suspension, or probation of a motor carrier's registration, and the motor carrier's appeal of the revocation, suspension, or probation. Proposed amendments are also necessary to clean up the rule text.

EXPLANATION.

HB 1672 became effective on May 24, 2025, and requires the department to adopt rules to create the requirements and procedures for the following under Transportation Code, §643.2526: 1) the revocation or suspension of a motor carrier's registration; 2) the placement of a motor carrier on probation whose registration is suspended; and 3) the motor carrier's appeal of the revocation, suspension or probation.

Proposed amendments to §224.116 would implement HB 1672 by modifying the title of the section and adding new subsection (h) to clarify that these administrative procedures do not apply to a proceeding under Transportation Code, §643.2526. Section 224.116 provides the administrative procedures for a proceeding under laws that require the department to provide written notice to the person and an opportunity for the person to request a hearing before the department takes an administrative action against

the person. Because Transportation Code, §643.2526 states that a department action under §643.2526 is not required to be preceded by notice and an opportunity for hearing, the department proposes amendments to §224.116 that would clarify that this section does not apply to a proceeding under §643.2526. Proposed amendments to §224.116(a) would also clean up the rule text by adding a hyphen to the term "first class mail" to read "first-class mail."

Proposed new §224.121 and proposed amendments to §224.124 are necessary to implement amendments made by HB 1672 to Transportation Code, §643.2526. These proposed revisions would govern the requirements and procedures under Transportation Code, §643.2526, which authorizes the department to deny an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643 (Motor Carrier Registration) prior to providing the person with notice and an opportunity for hearing. Upon request by the Texas Department of Public Safety (DPS) under Transportation Code, §643.252(b) and prior to providing the person with notice and an opportunity for hearing, the department is also authorized under Transportation Code, §643.2526 to revoke or suspend the registration of a motor carrier or to place a motor carrier on probation whose registration is suspended, if the motor carrier has an unsatisfactory safety rating under 49 C.F.R. Part 385 (Safety Fitness Procedures), which is determined by the Federal Motor Carrier Safety Administration (FMCSA); or multiple violations of Transportation Code, Chapter 644 (Commercial Motor Vehicle Safety Standards), a rule adopted under Chapter 644, or Subtitle C (Rules of the Road) of Transportation Code, Title 7 (Vehicles and Traffic), which is determined by DPS. The references to registration under Transportation Code, Chapter 643 are references to operating authority to operate as a motor carrier, rather than vehicle registration under Transportation Code, Chapter 502.

Proposed new §224.121 would provide the requirements and procedures regarding the department's action under Transportation Code, §643.2526. Proposed new §224.121(a) would state that the department will only revoke a motor carrier's registration under Transportation Code, §643.2526 pursuant to a request from DPS under Transportation Code, §643.252(b). Although Transportation Code, §643.252(b) authorizes DPS to request the department to suspend or revoke a registration issued to a motor carrier under Transportation Code, Chapter 643, or to place on probation a motor carrier whose registration is suspended, the department will only revoke the registration of a motor carrier under Transportation Code, §643.252(b). The department's current system is not programmed to suspend a motor carrier's registration, so revocation is the only option.

Also, the DPS rule regarding DPS's request to the department under Transportation Code, §643.252(b) only refers to a revocation of the motor carrier's registration. *See* 37 TAC §4.19(a). Transportation Code, §644.051(b) states that a DPS rule adopted under Transportation Code, Chapter 644 must be consistent with federal regulations. Section 4.19(a), which was adopted under the DPS rulemaking authority in Transportation Code, §644.051, is consistent with 49 C.F.R. §385.13(e), which states that if an interstate motor carrier has a final unsatisfactory safety rating, FMCSA will provide notice to the motor carrier and issue an order revoking the motor carrier's interstate registration, which is also known as operating authority to operate as a motor carrier in interstate transportation. Because DPS does not administer Transportation Code, Chapter 643, DPS must request the department to revoke a motor carrier's registration for intrastate transportation.

Proposed new §224.121(a) would also state that the department will not take action under Transportation Code, §643.252(b) until FMCSA or DPS, as applicable, issues an order regarding the laws referenced in §643.252(b). This requirement is necessary to help protect the person's due process rights because Transportation Code, §643.2526 authorizes the department to take action against the person prior to providing notice and an opportunity for a hearing. FMCSA and DPS are required to comply with the due process requirements under the laws that govern their actions when issuing an order under the laws referenced in Transportation Code, §643.252(b). The process set out in proposed new §224.121(a) would ensure that while a motor carrier may not receive notice and an opportunity for a hearing from the department before the department revokes the motor carrier's registration, the motor carrier should have received full due process on the same factual and legal allegations from either FMCSA or DPS.

The FMCSA order under 49 C.F.R. §385.13(d)(1) is called an out-of-service order, which prohibits the motor carrier from engaging in interstate transportation. *See* 49 U.S.C. §31144(c) and 49 C.F.R. §385.1(a) and §385.13(d)(1). The FMCSA procedures and proceedings regarding an out-of-service order are governed by 49 U.S.C. §31144, 49 C.F.R. Part 385 (Safety Fitness Procedures), and 49 C.F.R. Part 386 (Rules of Practice for FMCSA Proceedings).

The DPS order under Transportation Code, §644.155 and 37 TAC §4.15 is called an order to cease, which prohibits the motor carrier from operating a commercial motor vehicle in intrastate transportation. The DPS proceedings regarding an order to cease are governed by 37 TAC §4.15 and §4.18. The DPS order to cease tells the motor carrier that it must immediately cease all intrastate transportation until such time as DPS determines the motor carrier's safety rating is no longer unsatisfactory.

Proposed new §224.121(b) would state that the department will issue notice of the department's action under Transportation Code, §643.2526 to the person by email and first class mail using the person's last known address in the department's records. The notice requirements under Government Code, §2001.054(c) do not apply to the department's notice regarding the department's action under Transportation Code, §643.2526 because Transportation Code, §643.2526(a) says that the department's action under Transportation Code, §643.252(b) is not required to be preceded by notice and an opportunity for hearing, notwithstanding other law. Also, the motor carrier should have already received due process under the DPS or FMCSA proceeding that resulted in an order to cease or out-of-service order, respectively.

Proposed amendments to §224.124 would implement HB 1672 by modifying the title of the section to refer to an appeal of a department action. Proposed amendments to §224.124 would delete subsection (a), and amend current subsections (b) and (c) to expand the scope of the rule to be consistent with the expanded scope of Transportation Code, §643.2526 as amended by HB 1672. A proposed amendment to current subsection (b) would clarify that Subchapter E of Chapter 224 of this title is not the only subchapter in Chapter 224 that would apply to an appeal to the department under Transportation Code, §643.2526. Proposed amendments to §224.124 would also re-letter existing subsections (b), (c), and (d) due to the proposed deletion of subsection (a).

Proposed new §224.124(d) would state that on appeal under Transportation Code, §643.2526, the department will not rescind a revocation under Transportation Code, §643.252(b), based on the motor carrier taking corrective action that results in an upgrade to its unsatisfactory safety rating after the department has issued notice to the motor carrier that it revoked the motor carrier's registration. DPS wants the department to immediately revoke a motor carrier's registration under Transportation Code, Chapter 643 once DPS requests the department to revoke under Transportation Code, §643.252(b). The department will not wait to see if the motor carrier takes either of the following actions prior to revoking the motor carrier's registration: 1) requests DPS or FMCSA, as applicable, to change the final safety rating or to conduct a review regarding the final safety rating; or 2) appeals their final safety rating to a court under the laws that govern the DPS or FMCSA order, as applicable.

FMCSA's regulation states that a motor carrier that has taken action to correct the deficiencies that resulted in a final rating of "unsatisfactory" may request a rating change at any time. *See* 49 C.F.R. §385.17(a). Another FMCSA regulation states as follows: 1) that a motor carrier may request FMCSA to conduct an administrative review if it believes that FMCSA committed an error in assigning the final safety rating; 2) that FMCSA's decision under the administrative review constitutes the final agency action; and 3) that a motor carrier may request a rating change under the provisions of 49 C.F.R. §385.17. *See* 49 C.F.R. §385.15. In addition, federal law authorizes the motor carrier to appeal FMCSA's final order to the applicable United States Court of Appeals under 49 U.S.C. §521(b)(9) and 49 C.F.R. §386.67. Therefore, it is possible that FMCSA could change a motor carrier's safety rating from unsatisfactory to satisfactory or conditional after FMCSA issued the out-of-service order to the motor carrier and after the department revoked the motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b).

The DPS administrative rule states that a motor carrier that has taken action to correct the deficiencies that resulted in a final rating of "unsatisfactory" may request a rating change at any time. *See* 37 TAC §4.15(b)(3)(G). The DPS rule also states that the motor carrier may request DPS to conduct a departmental review if the motor carrier believes that DPS has committed error in assigning the final safety rating, that the final safety rating under the DPS departmental review constitutes a final agency decision, and that any judicial review of the DPS final agency decision is subject to Government Code, Chapter 2001. *See* 37 TAC §4.15(b)(3)(H) and (I). Therefore, it is possible that DPS could change a motor carrier's safety rating from unsatisfactory to satisfactory or conditional after DPS issued the order to cease to the motor carrier and after the department revoked the motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b).

Once the department issues a revocation under Transportation Code, §643.2526, the revocation is effective and cannot be rescinded unless the motor carrier submits a timely appeal under §643.2526. If the motor carrier timely submits an appeal under Transportation Code, §643.2526, if the underlying order from DPS or FMCSA was issued in compliance with the motor carrier's due process rights, and if the requirements under Transportation Code, §643.252(b) were met at the time DPS requested the department to revoke the motor carrier's registration, the department's revocation will not be rescinded on appeal to the department. If the motor carrier resolves its unsatisfactory safety rating and is no longer subject to the order to cease or out-of-service order after the department revokes the motor carrier's registration, the evidence on appeal will not show any error regarding the department's revocation. However, an appeal of a revocation under Transportation Code, §643.2526 may result in a rescission of the revocation if the underlying order from DPS or FMCSA, as applicable, was issued in violation of the motor carrier's due process rights or was issued to the motor carrier in error.

When determining whether to request the department to revoke the motor carrier's registration under Transportation Code, §643.252(b), it is within DPS's discretion to consider whether the motor carrier's unsatisfactory safety rating might change to a satisfactory or conditional safety rating after the issuance of an order to cease or an out-of-service order. Once the department receives the request from DPS to revoke the motor carrier's registration under Transportation Code, §643.252(b), the department will immediately revoke the registration. If the department revoked a motor carrier's registration pursuant to DPS's request under Transportation Code, §643.252(b), and the motor carrier later improves its safety rating and is no longer subject to an out-of-service order or an order to cease, the department will consider this fact when reviewing the motor carrier's application for reregistration under Transportation Code, §643.0585 or the motor carrier's application for registration under Transportation Code, §643.052.

Proposed new §224.124(e) would require the person who submits an appeal to the department under Transportation Code, §643.2526 to state why the person claims the department's action is erroneous, as well as the legal and factual basis for the claimed error. This information is necessary to enable the department to comply with a requirement to docket the contested case with the State Office of Administrative Hearings under 1 TAC §155.53(a)(1), which requires the Request to Docket Case form to be submitted together with the complaint or other pertinent documents describing the agency action giving rise to the contested case.

FISCAL NOTE AND LOCAL EMPLOYMENT IMPACT STATEMENT. Glenna Bowman, Chief Financial Officer, has determined that for each year of the first five years the amendments and new section will be in effect, there will be no significant fiscal impact to state or local governments as a result of the enforcement or administration of the proposal. Corrie Thompson, Director of the Enforcement Division (ENF), has determined that there will be no significant impact on local employment or the local economy as a result of the proposal.

PUBLIC BENEFIT AND COST NOTE. Ms. Thompson has also determined that, for each year of the first five years the amended and new sections are in effect, there is an anticipated public benefit because the proposal provides clarity for the motor carrier industry that is governed by these provisions.

Anticipated Public Benefits. The public benefit anticipated as a result of the proposal includes clarity for the motor carrier industry regarding the procedures, requirements, and restrictions under Transportation Code, §643.2526.

Anticipated Costs to Comply with the Proposal. Ms. Thompson anticipates that there will be no costs to comply with these rules for the reasons stated in this preamble.

ECONOMIC IMPACT STATEMENT AND REGULATORY FLEXIBILITY ANALYSIS. As required by Government Code, §2006.002, the department has determined that the proposed new section and amendments will not have an adverse economic effect on small businesses, micro-businesses, and rural

communities for the reasons stated in this preamble. Therefore, the department is not required to prepare a regulatory flexibility analysis under Government Code, §2006.002.

TAKINGS IMPACT ASSESSMENT. The department has determined that no private real property interests are affected by this proposal and that this proposal does not restrict or limit an owner's right to property that would otherwise exist in the absence of government action and, therefore, does not constitute a taking or require a takings impact assessment under Government Code, §2007.043.

GOVERNMENT GROWTH IMPACT STATEMENT. The department has determined that each year of the first five years the proposed new section and amendments are in effect, no government program would be created or eliminated. Implementation of the proposed new section and amendments would not require the creation of new employee positions or elimination of existing employee positions. Implementation would not require an increase or decrease in future legislative appropriations to the department or an increase or decrease in fees paid to the department. The proposed new section and amendments create a new regulation regarding the revocation of a motor carrier's registration under Transportation Code, §643.2526 pursuant to a request from DPS under Transportation Code, §643.252(b). The proposed new section and amendments expand an existing regulation regarding the department's authority to deny an application for registration, renewal of registration, or reregistration under Transportation Code, §643.2526. The proposed rules would not limit or repeal any regulations. Lastly, the proposed new section and amendments do not affect the number of individuals subject to the rule's applicability and will not affect this state's economy.

REQUEST FOR PUBLIC COMMENT.

If you want to comment on the proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

STATUTORY AUTHORITY. The department proposes amendments under Transportation Code, §643.2526(d), which requires the department to adopt rules as necessary to implement §643.2526, including rules governing the requirements and procedures under §643.2526; Government Code, §2001.004, which requires state agencies to adopt rules of practice stating the nature and requirements of all available formal and informal procedures; Transportation Code, §643.003, which authorizes the department to adopt rules to administer Transportation Code, Chapter 643; Transportation Code, §643.252, which authorizes the department to suspend, revoke, or deny a registration issued under Transportation Code, Chapter 643 or place on probation a motor carrier whose registration is suspended; Transportation Code, §1002.001, which authorizes the board to adopt rules that are necessary and appropriate to implement the powers and duties of the department; and the statutory authority referenced throughout this preamble and in the rule text, which is incorporated herein by reference.

CROSS REFERENCE TO STATUTE. The proposed amendments would implement Government Code, Chapter 2001; and Transportation Code, §§643.252(b), 643.2526, and 1002.001.

§224.116. Administrative Proceedings, Excluding Proceedings Under Transportation Code, §643.2526.

(a) If the department decides to take an enforcement action under §218.16 of this title (relating to Insurance Requirements) for the revocation of self-insured status, §218.64 of this title (relating to Rates), §218.71 of this title (relating to Administrative Penalties), §219.121 of this title (relating to Administrative Penalties and Sanctions under Transportation Code, §623.271), §218.72 of this title (relating to Administrative Sanctions), or §219.126 of this title (relating to Administrative Penalty for False Information on Certificate by a Shipper), the department shall mail a Notice of Department Decision to the person by first-class [~~first class~~] mail to the last known address as shown in department records. If the enforcement action falls under the Memorandum of Agreement with the Federal Motor Carrier Safety Administration (FMCSA) under §218.71, the department shall mail the Notice of Department Decision to the person by first-class [~~first class~~] mail to the last known address as shown in FMCSA's records.

(b) The Notice of Department Decision shall include:

(1) a brief summary of the alleged violation or enforcement action being proposed;

(2) a statement describing each sanction, penalty, or enforcement action proposed;

(3) a statement informing the person of the right to request a hearing;

(4) a statement of the procedure a person must use to request a hearing, including the deadline for filing a request with the department and the acceptable methods to request a hearing; and

(5) a statement that a proposed penalty, sanction, or enforcement action will become final and take effect on a specific date if the person fails to request a hearing.

(c) A person must submit to the department a written request for a hearing to the address provided in the Notice of Department Decision not later than the 26th day after the date the notice is mailed by the department; however, this requirement does not apply to a contested case that falls under §218.64 and Transportation Code, §643.154.

(d) If a person submits a timely written request for a hearing or the contested case that falls under §218.64 and Transportation Code, §643.154, the department will contact the person and attempt to informally resolve the contested case. If the person and the department cannot informally resolve the contested case, the department will refer the contested case to SOAH to set a hearing date and will give notice of the time and place of the hearing to the person.

(e) Except as provided by Transportation Code, §643.154, if the person does not make a timely request for a hearing or agree to settle a contested case within 26 days of the date the Notice of Department Decision was mailed, the allegations are deemed admitted on the 27th day and a final order including sanctions and penalties may be issued by the final order authority.

(f) Except as provided by statute and the applicable provisions of this chapter, any SOAH proceeding is governed by Government Code, Chapter 2001 and 1 TAC Chapter 155, including the authority of the department to informally dispose of the contested case by stipulation, agreed settlement, consent order, or default. The department will follow the process set forth in Transportation Code, §643.2525 and the applicable provisions of this chapter when enforcing the federal laws and regulations cited in §218.71 to the extent authorized by applicable federal laws and regulations.

(g) The department and the person may informally resolve the contested case by entering into a settlement agreement or agreeing to

stipulations at any time before the director issues a final order. However, the person must pay any penalty in full prior to the execution of a settlement agreement.

(h) This section does not apply to a department action under Transportation Code, §643.2526.

§224.121. Administrative Proceedings under Transportation Code, §643.2526.

(a) The department will only revoke the registration of a motor carrier under Transportation Code, §643.2526 pursuant to a request from the Texas Department of Public Safety under Transportation Code, §643.252(b) after the issuance of an order by the following, as applicable:

(1) the Federal Motor Carrier Safety Administration regarding an unsatisfactory safety rating under 49 C.F.R. Part 385; or

(2) the Texas Department of Public Safety regarding multiple violations of the following:

(A) Transportation Code, Chapter 644;

(B) a rule adopted under Transportation Code, Chapter 644; or

(C) Subtitle C of Title 7 of the Transportation Code.

(b) The department will issue notice of the department's action under Transportation Code, §643.2526 to the person by email and first class mail using the person's last known address in the department's records.

§224.124. Appeal of Department Action [~~of Denial~~] Under Transportation Code, §643.2526.

[~~(a) Pursuant to Transportation Code, §643.2526, an applicant may appeal the denial of an application for registration, renewal of registration, or reregistration under Transportation Code, Chapter 643.~~]

(a) [~~(b)~~] An [~~The~~] appeal to the department under Transportation Code, §643.2526 will be governed by Chapter 224 [, ~~Subchapter E~~] of this title (relating to Adjudicative Practice and Procedure) [~~Contested Cases Referred to SOAH~~)].

(b) [~~(c)~~] An [~~The applicant's~~] appeal will be considered untimely if it is not filed with the department by the 26th day after the date of the department's issuance of notice of the department's action. [~~denial of the application.~~] The department will not consider an untimely appeal.

(c) [~~(d)~~] An application that is withdrawn under Transportation Code, §643.055 is not a denial of an application for the purposes of an appeal under Transportation Code, §643.2526.

(d) On appeal, the department will not rescind a revocation under Transportation Code, §643.252(b) based on the motor carrier taking corrective action that results in an upgrade to its unsatisfactory safety rating after the department has issued notice to the motor carrier that the department revoked the motor carrier's registration.

(e) An appeal under Transportation Code, §643.2526 must state why the person claims the department's action is erroneous, as well as the legal and factual basis for the claimed error.

The agency certifies that legal counsel has reviewed the proposal and found it to be within the state agency's legal authority to adopt.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502354
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Earliest possible date of adoption: August 24, 2025
For further information, please call: (512) 465-4160

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WITHDRAWN RULES

Withdrawn Rules include proposed rules and emergency rules. A state agency may specify that a rule is withdrawn immediately or on a later date after filing the notice with the Texas Register. A proposed rule is withdrawn six months after the date of publication of the proposed rule in the Texas Register if a state agency has failed by that time to adopt, adopt as amended, or withdraw the proposed rule. Adopted rules may not be withdrawn. (Government Code, §2001.027)

TITLE 25. HEALTH SERVICES

PART 1. DEPARTMENT OF STATE HEALTH SERVICES

CHAPTER 97. COMMUNICABLE DISEASES

SUBCHAPTER B. IMMUNIZATION REQUIREMENTS IN TEXAS ELEMENTARY AND SECONDARY SCHOOLS AND INSTITUTIONS OF HIGHER EDUCATION

25 TAC §97.62

The Department of State Health Services withdraws proposed amendments to §97.62 which appeared in the July 4, 2025, issue of the *Texas Register* (50 TexReg 3854).

Filed with the Office of the Secretary of State on July 9, 2025.

TRD-202502315
Cynthia Hernandez
General Counsel
Department of State Health Services
Effective date: July 9, 2025
For further information, please call: (512) 776-6319

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ADOPTED RULES

Adopted rules include new rules, amendments to existing rules, and repeals of existing rules. A rule adopted by a state agency takes effect 20 days after the date on which it is filed with the Secretary of State unless a later date is required by statute or specified in the rule (Government Code, §2001.036). If a rule is adopted without change to the text of the proposed rule, then the *Texas Register* does not republish the rule text here. If a rule is adopted with change to the text of the proposed rule, then the final rule text is included here. The final rule text will appear in the Texas Administrative Code on the effective date.

TITLE 1. ADMINISTRATION

PART 15. TEXAS HEALTH AND HUMAN SERVICES COMMISSION

CHAPTER 351. COORDINATED PLANNING AND DELIVERY OF HEALTH AND HUMAN SERVICES

SUBCHAPTER B. ADVISORY COMMITTEES

DIVISION 1. COMMITTEES

1 TAC §§351.805, 351.821, 351.823, 351.825, 351.827

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts amendments to §351.805, concerning State Medicaid Managed Care Advisory Committee; §351.821, concerning Value-Based Payment and Quality Improvement Advisory Committee; §351.823, concerning e-Health Advisory Committee; §351.825, concerning Texas Brain Injury Advisory Council; and §351.827, concerning Palliative Care Interdisciplinary Advisory Council.

The amended sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3293). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

The amendments align the rules with statute and Executive Order No. GA-55 issued January 31, 2025.

The amendments also replace citations to Texas Government Code §531.012 with §523.0201 and §523.0203 in §§351.805, 351.821, 351.823, and 351.825 to comply with House Bill 4611, 88th Legislature, Regular Session, 2023. House Bill 4611 made certain non-substantive revisions to Subtitle I, Title 4, Texas Government Code, which governs HHSC, Medicaid, and other social services as part of the legislature's ongoing statutory revision program. The new Texas Government Code sections became effective April 1, 2025.

Additionally, the amendments extend the e-Health Advisory Committee (e-HAC) abolition date from December 31, 2025, to December 31, 2027. HHSC conducted an internal evaluation of e-HAC, including review of implementation of its recommendations to the agency, public and committee member participation at open meetings, and committee input to the agency regarding policy development and legislative implementation. In alignment with HHSC strategic goals and objectives, HHSC extends the committee for two years.

The amendments also include edits that align the rules with the current HHSC advisory committee rule template.

COMMENTS

The 21-day comment period ended June 27, 2025.

During this period, HHSC received comments regarding the proposed rules from three commenters. HHSC received comments from one individual, a member of the Texas e-Health Alliance, and a member of the e-HAC. A summary of comments relating to the rules and HHSC responses follows.

Comment: A commenter raised awareness of Senate Bill 14, 89th Texas Legislature, Regular Session, 2025 and House Bill 12, 89th Texas Legislature, Regular Session, 2025, and suggested amending the rules to address potential conflicts between HHSC policies and regulations. The commentor requested changes to implement these bills with respect to the advisory committees regarding conflicts between internal agency policies and corresponding administrative rules.

Response: HHSC appreciates the feedback and is currently working to implement the aforementioned bills; however, the requested change is outside the scope of the proposed rule amendments. No changes are made to the rules in response to this comment.

Comment: Two commenters expressed that they support the two-year extension of e-HAC. One commenter stated that the extension is an important step for Texas patients and providers and the commenter appreciates HHSC support of e-HAC. Another commenter highlighted the role e-HAC has in guiding HHSC and bringing attention to healthcare industry issues, and emphasized that advisory committees enhance transparency and accountability and strengthen public trust.

Response: HHSC acknowledges the comment. No changes are made to the rules in response to this comment.

STATUTORY AUTHORITY

The amendments are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, and Texas Government Code §523.0201 and §523.0203, which authorizes the executive commissioner to establish advisory committees by rule.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502498

Karen Ray
Chief Counsel
Texas Health and Human Services Commission
Effective date: August 3, 2025
Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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CHAPTER 355. REIMBURSEMENT RATES
SUBCHAPTER J. PURCHASED HEALTH SERVICES
DIVISION 16. MEDICAID PROFESSIONAL SERVICES

1 TAC §355.8301

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts new §355.8301, concerning Nurse Residency Program, in new Division 16, Medicaid Professional Services. New §355.8301 is adopted with changes to the proposed text as published in the January 24, 2025, issue of the *Texas Register* (50 TexReg 522). This rule will be republished.

BACKGROUND AND JUSTIFICATION

This new rule implements a Nurse Residency Program (NRP) to support increased retention of nurses through post-graduation and post-licensure residencies at state-owned Health-Related Institutions (HRIs). The new rule describes the participation requirements and structure of the NRP.

Payments will be based on the number of registered nurses (RNs) and licensed vocational nurses (LVNs) in formal nursing residencies using separate weighting factors as a fraction of the upper payment limit (UPL) for related fee-for-service claims. The new rule also describes the methodology used by HHSC to determine the payment amounts. HHSC has submitted this program to the Centers for Medicare and Medicaid Services (CMS) for approval under the Texas state plan. The program is expected to be funded by intergovernmental transfers.

COMMENTS

The 31-day comment period ended on February 24, 2025.

During this period, HHSC received comments regarding the proposed rule from four (4) commenters, the Teaching Hospitals of Texas, the Texas Medical Association, the University of Texas Medical Branch, and the Texas Nurses Association. A summary of comments relating to the rules and HHSC's responses follows.

Comment: Multiple commenters thanked HHSC for working to address the nursing shortage in Texas and support nurse training in the state.

Response: HHSC appreciates the support for the proposed amendment. No revision to the rule text was made in response to this comment.

Comment: One commenter urged HHSC to extend the program to public and private hospitals after CMS approval.

Response: HHSC acknowledges the comment and appreciates this suggestion. This program is new and unique. HHSC has submitted a state plan amendment to CMS based on the currently proposed structure. HHSC will take the suggestion to extend the program to additional public and private hospitals into account for future program updates based on the feedback received from CMS during its review process.

Comment: One commenter suggested clarifying the eligibility requirements for HRIs, suggesting that the program is limited to state-owned hospitals under the HRIs. The commenter alternatively suggested adopting a definition of eligible entities as state hospitals using the Medicaid program definition of state hospitals and using that definition consistently in the rule.

Response: In response to this comment, HHSC modified the definition of Health-Related Institution in §355.8301(b)(2) to remove the word "public" and replace it with "state-owned."

Comment: Two commenters recommended that the Medicaid payment gap allow for the greater of the Medicare UPL or the average commercial rate (ACR), since some hospitals' Medicare UPL may exceed the ACR.

Response: HHSC appreciates the suggestion but declines to make changes at this time because HHSC anticipates there will be an ACR gap sufficient to allow for supplemental payments to eligible institutions through this new program. HHSC will take this suggestion into consideration as we work through the implementation of this new program.

Comment: Two commenters asked for additional accreditation options for the program training requirements. Suggestions were allowing the Commission on Collegiate Nursing Education (CCNE) accreditation, Vizient, or American Association of Colleges and Nursing accreditation, or another similar internally developed program that meets similar standards and requirements. One commenter also suggested allowing hospital-developed programs to participate and suggested lowering the length of training to a three-month minimum for RNs and LVNs, advising that the actual length could vary based on facility and specialty.

Response: HHSC appreciates the suggestions but declines to make changes to the rule text. It is intentionally structured with a standard total duration to further training opportunities and incentivize LVNs and RNs to eventually practice independently. The goal of this program is to increase nurse retention, so shortening the duration required would not further the goal of the program to provide training and support to allow a transition period into practice for new nurses. Additionally, HHSC will be limiting the program to only the most thoroughly researched, vetted programs during the first year.

Comment: Two commenters suggested clarifying that although state general revenue (GR) is not available to support the program, state hospitals, which are appropriated GR, may use those funds as an intergovernmental transfer.

Response: In response to this comment, HHSC made a clarifying edit in §355.8301(d)(2) to specify that no state general revenue is available to HHSC to support the program.

Comment: One commenter recommended that the rule clarify the methodology for determining the number of nurse residents used as a basis for payment. The commenter suggested that HHSC use the total number of nurse residents in the prior year as the basis for payments in the program. The commenter also suggested that HHSC consider using either the total number of nurse residents employed in a year or the full-time equivalent nurse residents. The commenter believes that these suggested changes could help stabilize funding to reduce year-to-year variability.

Response: HHSC declines to make a change to use the total number of nurse residents in the prior year as a basis for payments. This program is designed to prioritize payments to providers serving a higher volume of Medicaid beneficiaries and those that have a higher number of LVNs and RNs in the clinical education program. Therefore, the program structure is dependent on the number of nurses training in the program year, with the applicable Medicaid payment gap for the identified timeframe. If prior years were used to make payments, it is anticipated that a reconciliation to actual nurses in the program year would be required; this change would not reduce variability as the commenter suggests.

Comment: One commenter wants HHSC to ensure that weighted payment factors account for all program costs, including salaries, accreditation fees, and training expenses, beyond only the preceptor costs.

Response: HHSC declines to make changes because the weighting factors are based on the total number of RNs and LVNs participating in the program and the Medicaid payment gap. This gap is not specific to program costs. The weighted payment factors divide the total Medicaid payment gap between RN and LVNs as a percentage of the total number of nurses. These factors would account for additional program costs within the available Medicaid payment gap.

Comment: Two commenters strongly recommend changing the program name and language to "transition to practice program" in lieu of "residency" to avoid confusion with medical provider residencies for physicians.

Response: HHSC had stakeholder meetings throughout the development of this program, discussed multiple options, and changed the name of the program to the current title based on stakeholder feedback. HHSC understands the concern and that there may be specific titles for programs used by individual hospitals. HHSC declines to make changes to the program name at this time and will reassess if CMS has questions during the state plan amendment approval process.

HHSC revised §355.8301(b) and (b)(6) to make minor stylistic edits.

HHSC revised §355.8301(b)(9) to remove "May 1, 2025" as the date the initial program period begins and replaced it with "on the later of the effective date of this rule or the effective date of the state plan amendment described in subsection (a)." HHSC also replaced "August 31, 2025" as the date the initial program period ends with "August 31 following the date the initial program period begins." These changes were made to reflect the timeframe for the initial program period in the event the rule or the state plan amendment or both become effective after August 31, 2025.

HHSC revised §355.8301(d)(2)(B) to remove "local" before "governmental entity for accuracy.

HHSC revised §355.8301(d)(3) to replace the acronym "NPIs" with its full form, "National Provider Identifiers," for clarity.

STATUTORY AUTHORITY

The new section is adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system; Texas Human Resources Code §32.021 and Texas Government Code §532.0051(a), which provide HHSC with authority to administer the federal medical assistance (Medicaid) program in Texas; and Texas Government Code §532.0057(a), which establishes HHSC as the agency responsible for adopting reasonable rules governing the determination of fees, charges, and rates for Medicaid payments under Texas Human Resources Code, Chapter 32.

The new section implements Texas Government Code Chapters 524 and 532, and Texas Human Resources Code Chapter 32.

§355.8301. Nurse Residency Program.

(a) Introduction. This section establishes the Nurse Residency Program (NRP), wherein the Texas Health and Human Services Commission (HHSC) directs payments to eligible health-related institutions (HRIs) that serve Texas Medicaid fee-for-service patients. This section also describes the methodology used by HHSC to calculate and administer such payments. A provider is eligible for a payment under this section only if HHSC submits, and the Centers for Medicare & Medicaid Services (CMS) approves, a state plan amendment permitting HHSC to make payments under this section to eligible HRIs participating in the program.

(b) Definitions. The following words and terms, when used in this section, have the following meanings unless the context clearly indicates otherwise.

(1) Fee-for-service (FFS)--A system of health insurance payment in which HHSC pays a fee to a health care provider through the contracted Medicaid claims administrator directly for each service rendered. For Texas Medicaid purposes, FFS excludes any service rendered under a managed care program through a managed care organization.

(2) Health-Related Institution (HRI)--A state-owned institution named in Texas Education Code §63.002.

(3) Intergovernmental transfer (IGT)--A transfer of public funds from another state agency or a non-state governmental entity to HHSC.

(4) Medicaid payment gap--The difference between what commercial insurers are estimated to pay for the services and what Medicaid actually paid for the same services from the most recent FFS upper payment limit (UPL) demonstration.

(5) Nurse trainee--A graduate of an accredited Registered Nurse (RN) or Licensed Vocational Nurse (LVN) training program who is engaging in a preceptorship through an entity participating in the Nurse Residency Program.

(6) Nurse Residency Program--A formal Practice Transition Accreditation Program (PTAP) accredited onboarding program or preceptorship for a nurse trainee to observe and develop skills in the practice of nursing. This training must be directly overseen by a preceptor. The clinical portion must be at least three months in duration for LVN preceptorships and at least 6 months in duration for RN preceptorships or as otherwise specified by the PTAP.

(7) Participating entity--A healthcare organization that:

(A) fulfills the participation requirements in subsection (c) of this section; and

(B) meets the requirements for an eligible institution in subsection (d)(1) of this section.

(8) Preceptor--A licensed RN or LVN who practices in the clinical setting and directly supervises clinical learning experiences for a nurse trainee in that setting. A clinical preceptor assists in the evaluation of the nurse trainee during the experiences and in acclimating the student to the role of nurse. A clinical preceptor facilitates nurse

trainee learning according to the facility policy for clinical preceptorship.

(9) Program period--A period for which a participating entity may receive the NRP amounts described in this section. Each program period is equal to a state fiscal year (SFY) beginning September 1 and ending August 31 of the following year. The initial program period begins on the later of the effective date of this rule or the effective date of the state plan amendment described in subsection (a), and ends on August 31 following the date the initial program period begins.

(10) Sponsoring governmental entity--A state or non-state governmental entity that agrees to transfer to HHSC some or all of the non-federal share of program expenditures under Subchapter J of this chapter.

(11) Total program value--The maximum amount available under the NRP for a program period, as determined by HHSC.

(c) Participation requirements. As a condition of participation, all eligible institutions participating in the program must allow for the following:

(1) An eligible institution must submit a properly completed enrollment application by the due date determined by HHSC. The enrollment period must be no less than 15 business days, and the final date of the enrollment period is at least nine days prior to the IGT notification.

(2) The participating entity is required to submit all requested information about the entity's residency programs consistent in a manner specified by HHSC.

(d) Payments for a participating entity.

(1) Eligible institutions. Payments under this subsection are limited to HRIs that have a Nurse Residency Program as defined in subsection (b) of this section. Eligible institutions must be enrolled in Medicaid and participate in Texas Medicaid FFS.

(2) Non-federal share of program payments. The non-federal share of the payments is funded through IGTs from sponsoring governmental entities. No state general revenue is available to HHSC to support the program.

(A) HHSC must receive the non-federal portion of program payments for NRP through a method approved by HHSC.

(B) A participating entity under this subsection must designate a single governmental entity to provide the non-federal share of the payment through a method determined by HHSC. If the single local governmental entity transfers less than the full non-federal share of an eligible institution's payment amount calculated in any paragraph under this subchapter, HHSC recalculates that specific participating entity's payment based on the amount of the non-federal share transferred.

(C) HHSC communicates suggested IGT responsibilities. Suggested IGT responsibilities are based on the maximum dollars to be available under the program for the program period as determined by HHSC. HHSC also communicates estimated revenues based on HHSC's suggested IGT responsibilities that each enrolled entity could earn through the NRP for the program period.

(D) HHSC issues an IGT notification to specify the date the IGT is requested to be transferred at least 14 business days before IGT transfers are due. HHSC publishes the IGT deadlines and all associated dates on the HHSC website.

(3) Payment Methodology. HHSC sums the professional services FFS Medicaid payment gap for all billed Medicaid claims from associated provider National Provider Identifiers, not including anesthesia, dental, or pharmacy codes, or radiology codes billed separately as professional or technical components. HHSC then:

(A) multiplies by a fixed weighting factor determined by the percentage of RNs participating in the program as compared to all RNs and LVNs participating in the program, and then multiplies the product by the number of RNs in residency during the program period for Component 1; and

(B) multiplies by a second fixed weighting factor determined by the percentage of LVNs participating in the program as compared to all LVNs and RNs participating in the program, and then multiplies the product by the number of LVNs in residency during the program period for Component 2.

(e) Changes in operation. If a participating entity closes voluntarily or ceases to provide services, the entity must notify the HHSC Provider Finance Department by email, hand delivery, United States (U.S.) mail, or special mail delivery within 10 business days after closing or ceasing to provide services. Notification is considered to have occurred when the HHSC Provider Finance Department receives the notice.

(f) Reconciliation. HHSC reconciles the amount of the non-federal funds actually expended under this section during the program period with the amount of funds transferred to HHSC by a sponsoring governmental entity for that same period. If the amount of non-federal funds actually expended under this section is less than the amount transferred to HHSC, HHSC refunds the balance proportionally to how it was received.

(g) The two payments under this section will be made on a semi-annual basis.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502251
Karen Ray
Chief Counsel
Texas Health and Human Services Commission
Effective date: July 23, 2025
Proposal publication date: January 24, 2025
For further information, please call: (737) 867-7999

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CHAPTER 394. MEDIATION AND NEGOTIATED RULEMAKING

1 TAC §§394.1 - 394.7

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 394, consisting of §394.1, concerning Definitions; §394.2, concerning Policy; §394.3, concerning Circumstances in Which Mediation is Offered; §394.4, concerning Dispute Resolution Administrator; §394.5, concerning Dispute Resolution Coordinators; §394.6, concerning Mediation Process; and §394.7, concerning Negotiated Rulemaking.

All sections are adopted without changes to the proposed text as published in the May 23, 2025, issue of the *Texas Register* (50 TexReg 3053). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

The repeals are necessary to remove outdated rules concerning alternative dispute resolution and negotiated rulemaking. The rules were last modified in 2006. Following repeal, HHSC will maintain policies encouraging the use of negotiated rulemaking and alternative dispute resolution as required by Texas Government Code §524.0153.

COMMENTS

The 21-day comment period ended June 13, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502502
Karen Ray
Chief Counsel
Texas Health and Human Services Commission
Effective date: August 3, 2025
Proposal publication date: May 23, 2025
For further information, please call: (512) 221-9021

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TITLE 10. COMMUNITY DEVELOPMENT

PART 1. TEXAS DEPARTMENT OF HOUSING AND COMMUNITY AFFAIRS

CHAPTER 23. SINGLE FAMILY HOME PROGRAM

SUBCHAPTER E. TENANT-BASED RENTAL ASSISTANCE PROGRAM

10 TAC §23.50

The Texas Department of Housing and Community Affairs (the Department) adopts, without changes to the proposed text as published in the April 25, 2025 issue of the *Texas Register* (50 TexReg 2547), amendments to 10 TAC Chapter 23, §23.50, Tenant-Based Rental Assistance (TBRA) General Requirements. The rule will not be republished. The amendments clarify that a 60-month limitation on assistance does not apply to persons with disabilities that meet certain criteria.

FISCAL NOTE. Mr. Bobby Wilkinson, Executive Director, has determined that, for each year of the first five years the amendment to the rule is in effect, enforcing or administering the amendment does not have any foreseeable implications related to costs or revenues of the state or local governments.

GOVERNMENT GROWTH IMPACT STATEMENT. Mr. Wilkinson also has determined that, for the first five years the amendment would be in effect:

1. The amendment will not create or eliminate a government program;

2. The amendment will not require a change in the number of employees of the Department;

3. The amendment will not require additional future legislative appropriations;

4. The amendment will result in neither an increase nor a decrease in fees paid to the Department;

5. The amendment will not create a new regulation;

6. The amendment will not repeal an existing regulation;

7. The amendment will not increase or decrease the number of individuals subject to the rule's applicability; and

8. The amendment will neither positively nor negatively affect this state's economy.

PUBLIC BENEFIT/COST NOTE. Mr. Wilkinson also has determined that, for each year of the first five years the amendment to the rule is in effect, the public benefit anticipated as a result of the action will be conformance to statutory requirements. There will not be any economic cost to any individual required to comply with the amendment.

ADVERSE IMPACT ON SMALL OR MICRO-BUSINESSES OR RURAL COMMUNITIES. The Department has determined that there will be no economic effect on small or micro-businesses or rural communities.

SUMMARY OF PUBLIC COMMENT. The public comment period was held April 25, 2025, to May 26, 2025, to receive input on the amended section. No public comment was received.

STATUTORY AUTHORITY. The amendment is made pursuant to Tex. Gov't Code §2306.053, which authorizes the Department to adopt rules.

Except as described herein the amendment affects no other code, article, or statute.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502367
Bobby Wilkinson
Executive Director
Texas Department of Housing and Community Affairs
Effective date: July 31, 2025
Proposal publication date: April 25, 2025
For further information, please call: (512) 475-3959

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TITLE 16. ECONOMIC REGULATION

PART 2. PUBLIC UTILITY COMMISSION OF TEXAS

CHAPTER 24. SUBSTANTIVE RULES APPLICABLE TO WATER AND SEWER SERVICE PROVIDERS

SUBCHAPTER H. CERTIFICATES OF CONVENIENCE AND NECESSITY

16 TAC §24.245, §24.257

The Public Utility Commission of Texas (commission) adopts amendments to §24.245 (relating to Revocation of a Certificate of Convenience and Necessity or Amendment of a Certificate of Convenience and Necessity by Decertification, Expedited Release, or Streamlined Expedited Release) and §24.257 (relating to Mapping Requirements for Certificate of Convenience and Necessity Applications) with no changes to the proposed text as published in the April 18, 2025 issue of the *Texas Register* (50 TexReg 2467). The amended rules will require an applicant to attest that it has reviewed the commission's online mapping resources--including all video files--as a necessary component of an application submission. The rules will not be republished.

Public Comments

In addition to comments on the proposed rule, the commission invited interested parties to comment on the following questions.

Should the commission adopt remedial requirements for an applicant that fails to present adequate mapping information despite the submission of an attestation? If so, what measures are appropriate? For example, should the rule require an applicant to attest to re-review of PUC mapping resources upon the commission' s determination that mapping information in a previous application was deficient?

TAWC requested the commission reject the proposed rule's remedial attestation requirements and, instead, approve alternative rule language requiring that all mapping requirements be in writing and subject to prior commission review and approval.

TAWC further recommended that any mapping deficiency recommendation or corrective guidance be based on specific commission-approved rules and articulated in writing on the record so that a complete record is available to all parties and the presiding officer for evaluation of the alleged deficiency's substance.

Commission Response

The commission agrees with an underlying sentiment expressed by TAWC, which is that the commission's online mapping resources provide guidance on a range of topics that is not identical to those that are relevant for sufficiency determinations. Accordingly, the commission does not modify the rule to include a remedial attestation requirement for an applicant that fails to present adequate mapping information.

The commission declines to withdraw this rulemaking in favor of a requirement that all mapping requirements be in writing and subject to prior commission review and approval, because these two concepts are unrelated. The intent behind this amendment is to improve the quality of mapping information submitted by applicants. In many cases these improvements will lead to improved sufficiency outcomes, but the commission expects it will produce additional benefits beyond what is strictly required by other portions of the rules.

General Comments

TAWC expressed concern with the attestation requirement because the commission's mapping resources "are not comprehensive" and do not address most of the mapping requirements that are applied by the commission to recommend deficiencies.

Commission Response

The mapping attestation and mapping resources webpage addresses frequently asked questions from first time applicants on preliminary issues identified by commission staff. The intent behind this amendment is to improve the quality of mapping information submitted by applicants. In many cases these improvements will lead to improved sufficiency outcomes, but the commission expects it will produce additional benefits beyond what is strictly required by other portions of the rule.

TAWC made a number of recommendations proposing rule modifications related to commission staff's recommendations of application sufficiency and commission sufficiency determinations in related contested case proceedings. These modifications included defining "deficiency" under the rule to include a materiality threshold for recommended non-substantive edits to maps, a requirement commission staff to articulate the specific nature of deficiencies in writing, and the commission sufficiency determinations be based on written standards previously approved by the commission. TAWC's comments acknowledge that its proposed changes may require "adopting different rules in a different project" and that TAWC would support "initiating a separate rulemaking project" to allow for a more comprehensive review of the rules necessary to effect its recommended changes.

Commission Response

The recommendations made by TAWC related to sufficiency recommendations and determinations in related contested cases are beyond the noticed scope of the proposed rule amendments in this rulemaking project. The commission appreciates TAWC's explicit acknowledgment that its recommendations may require action in a separate project. The commission and commission staff will continue to work with stakeholders to achieve better and more efficient outcomes in mapping-related contested cases.

Statutory Authority

The amendments are adopted under Texas Water Code §13.041(a), which provides the commission the general power to regulate and supervise the business of each public utility within its jurisdiction and to do anything specifically designated or implied by the Texas Water Code that is necessary and convenient to the exercise of that power and jurisdiction; Texas Water Code §13.041(b), which provides the commission with the authority to adopt and enforce rules reasonably required in the exercise of its powers and jurisdiction §13.242(c) which governs applications for exempt utility registration; § 13.244 which governs the procedure for a utility to obtain and amend CCN applications; §13.245, which governs procedures for service extensions within the boundaries or extraterritorial jurisdiction of certain municipalities by a retail public utility; §13.250 which governs a utility's application to discontinue service & cancel CCN; §13.255 which governs single certification for incorporated or annexed areas; §13.301 which governs sale, transfer, merger (STM) application; §13.2451 which governs procedures for extension of a municipalities extraterritorial jurisdiction into the service area of a retail public utility; §13.254 which authorizes the commission, after notice and hearing, to revoke or amend a CCN upon written consent of the certificate holder and governs procedures for the expedited release of an area from a CCN's service territory; §13.2541 which governs procedures for the streamlined expedited release of an area from a CCN's service territory as an alternative to decertification or expedited release under §13.254.

Cross Reference to Statute: Texas Water Code §§13.041(a) and (b); 13.242(c); 13.244; 13.250; 13.255;13.301; 13.245; 13.2451, 13.254, 13.2541.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502320
Adriana Gonzales
Rules Coordinator
Public Utility Commission of Texas
Effective date: July 30, 2025
Proposal publication date: April 18, 2025
For further information, please call: (512) 936-7322

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TITLE 19. EDUCATION

PART 2. TEXAS EDUCATION AGENCY

CHAPTER 127. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER DEVELOPMENT AND CAREER AND TECHNICAL EDUCATION

SUBCHAPTER B. HIGH SCHOOL

19 TAC §127.15

The State Board of Education (SBOE) adopts new §127.15, concerning Texas Essential Knowledge and Skills (TEKS) for career development and career and technical education (CTE). The new section is adopted with changes to the proposed text as published in the May 16, 2025 issue of the *Texas Register* (50 TexReg 2887) and will be republished. The new section establishes TEKS in employability skills for effective performance in the workplace. The employability skills standards will be required to be taught as a part of each CTE course in a program of study.

REASONED JUSTIFICATION: In accordance with statutory requirements that the SBOE identify by rule the essential knowledge and skills of each subject in the required curriculum, the SBOE follows a board-approved cycle to review and revise the essential knowledge and skills for each subject. A full revision of the CTE TEKS was conducted in 2009 and 2014. As part of the 2014 review, the educator review committees recommended the inclusion in the TEKS for all CTE courses a strand in employability skills for effective performance in the workplace. The SBOE approved CTE TEKS with the employability skills strand for courses in the 16 career clusters that existed at that time to be effective August 28, 2017.

Since the 2014 CTE TEKS review, any revisions to the TEKS for CTE courses have included an employability skills strand; however, the employability skills vary across the current 14 CTE career clusters and in some instances vary among courses within the same career cluster. At the January 2025 SBOE meeting, the board discussed the option to develop a universal set of CTE TEKS in employability skills that would be required to be taught as part of each CTE course. The discussion included establishing one set of employability skills standards for courses identified as Level 1 and 2 in a CTE program of study and a second universal set of advanced employability skills standards for courses identified as Level 3 and 4 in a CTE program of study. Proposed new employability skills were approved for first reading and filing authorization at the April 2025 SBOE meeting.

Adopted new §127.15 identifies standards to be taught as part of each CTE course. At adoption, the section title was changed to remove the phrase "Adopted 2025."

The SBOE approved the new section for first reading and filing authorization at its April 11, 2025 meeting and for second reading and final adoption at its June 27, 2025 meeting.

In accordance with Texas Education Code, §7.102(f), the SBOE approved the new rule for adoption by a vote of two-thirds of its members to specify an effective date earlier than the beginning of the 2026-2027 school year. The earlier effective date will allow districts to implement new TEKS for employability skills beginning with the 2025-2026 school year. The effective date is 20 days after filing as adopted with the *Texas Register*.

SUMMARY OF COMMENTS AND RESPONSES: The public comment period on the proposal began May 16, 2025, and ended at 5:00 p.m. on June 16, 2025. The SBOE also provided an opportunity for registered oral and written comments at its June 2025 meeting in accordance with the SBOE board operating policies and procedures. Following is a summary of the public comments received and corresponding responses.

Comment. One community member stated that the objectives for the two Advanced Placement (AP) courses in CTE programs of study comprehensively address the proposed employability skills.

Response. The SBOE disagrees that AP Computer Science A and AP Computer Science Principles comprehensively address the employability skills in new 19 TAC §127.15, Career and Technical Education Employability Skills, and took action to adopt the new TEKS to be offered together with the essential knowledge and skills for all CTE courses.

Comment. One community member expressed support for a standard set of employability skills across the board for all CTE courses but asked to maintain the integrity of the current TEKS in agriculture that will be effective August 1, 2025.

Response. The SBOE agrees that a standard set of general employability skills for all career clusters is appropriate and took action to adopt new 19 TAC §127.15, Career and Technical Education Employability Skills, as proposed.

Comment. One administrator recommended embedding the following knowledge and skills statement and student expectations from §127.469(d)(11)(A) and (B), Principles of Hospitality and Tourism, into all CTE instruction as follows:

(11) The student understands the importance of customer service. The student is expected to:

(A) determine ways to provide quality customer service;

(B) analyze how guests are affected by employee attitude, appearance, and actions.

Response. The SBOE disagrees that the recommended standards should be included in all CTE courses and took action to adopt new 19 TAC §127.15, Career and Technical Education Employability Skills, as proposed.

Comment. One administrator recommended embedding the following student expectations from §127.477(d)(6)(C)-(F), Hospitality Services, into all CTE instruction as follows:

(6) The student applies leadership, teamwork, and critical-thinking skills in collaboration with others to accomplish organizational goals or objectives. The student is expected to:

(C) evaluate methods of conflict-management skills to facilitate appropriate solutions;

(D) resolve unexpected situations in customer service;

(E) understand diverse employee cultures and customs;

(F) value cultural diversity of guests.

Response. The SBOE disagrees that the recommended standards should be included in all CTE courses and took action to adopt new 19 TAC §127.15, Career and Technical Education Employability Skills, as proposed.

Comment. One administrator recommended applying the proposed employability skills TEKS in entry-level or senior-level CTE courses only. The commenter stated that employability skills are important but requiring the proposed TEKS to be applied in every CTE course would be redundant.

Response. The SBOE disagrees and has determined that including the proposed new employability skills TEKS in all CTE courses is appropriate and supports college and career readiness.

STATUTORY AUTHORITY. The new section is adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments; and TEC, §28.025(a), which requires the SBOE to determine by rule the curriculum requirements for the foundation high school graduation program that are consistent with the required curriculum under TEC, §28.002.

CROSS REFERENCE TO STATUTE. The new section implements Texas Education Code, §§7.102(c)(4); 28.002(a) and (c); and 28.025(a).

§127.15. Career and Technical Education Employability Skills.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(b) General requirements. These standards may not be offered as a standalone course. These standards shall be offered together with the essential knowledge and skills for career and technical education (CTE) courses in this chapter.

(c) Introduction.

(1) CTE instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The goal of the employability skills standards is to ensure that students develop essential skills for effective performance in the workplace, regardless of the occupation.

(3) These standards are required to be addressed in their entirety as part of each CTE course based on the level of the course in a CTE program of study.

(A) CTE courses identified as Level 1 or Level 2 courses in a CTE program of study must address the employability skills standards identified in subsection (d)(1) of this section.

(B) CTE courses identified as Level 3 or Level 4 courses in a CTE program of study must address the employability skills standards identified in subsection (d)(2) of this section.

(4) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability skills--Levels 1 and 2. In a CTE course identified as a Level 1 or Level 2 course in a CTE program of study, the student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) explain the importance of dressing appropriately, speaking politely, and conducting oneself in a manner appropriate for the profession and work site;

(B) describe teamwork, group dynamics, and conflict resolution and how they can impact the collective outcome;

(C) present written and oral technical communication in a clear, concise, and effective manner for a variety of purposes and audiences;

(D) identify time-management skills such as prioritizing tasks, following schedules, and tending to goal-relevant activities and how these practices optimize efficiency and results;

(E) define work ethic and discuss the characteristics of a positive work ethic, including punctuality, dependability, reliability, and responsibility for reporting for duty and performing assigned tasks;

(F) demonstrate respect for differences in the workplace;

(G) identify the importance and benefits of meritocracy, a hard work ethic, and equal opportunity in the workplace;

(H) identify consequences relating to discrimination and harassment;

(I) demonstrate knowledge of personal and occupational health and safety practices, including first aid, in the workplace;

(J) describe the roles and responsibilities of managers;

(K) identify career development and entrepreneurship opportunities in the field;

(L) identify appropriate training, education, or certification in the field; and

(M) identify legal and ethical responsibilities in relation to the field.

(2) Employability skills--Levels 3 and 4. In a CTE course identified as a Level 3 or Level 4 course in a CTE program of study, the student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) demonstrate dressing appropriately, speaking politely, and conducting oneself in a manner appropriate for the profession and work site;

(B) analyze how teams can produce better outcomes through cooperation, contribution, and collaboration from members of the team;

(C) present written and oral technical communication in a clear, concise, and effective manner for a variety of purposes and audiences, including explaining and justifying decisions;

(D) use time-management skills independently and in groups to prioritize tasks, follow schedules, and tend to goal-relevant activities in a way that optimizes efficiency and results;

(E) describe the importance of and demonstrate punctuality, dependability, reliability, and responsibility in reporting for duty and performing assigned tasks as directed;

(F) demonstrate respect for differences in the workplace;

(G) identify the importance and benefits of meritocracy, a hard work ethic, and equal opportunity in the workplace;

(H) identify consequences relating to discrimination and harassment;

(I) demonstrate knowledge of personal and occupational health and safety, applicable regulations, and first aid in the workplace and discuss why it is critical for employees and employers to maintain a safe work environment;

(J) compare skills and characteristics of managers and leaders in the workplace; and

(K) identify career development opportunities in the field:

(i) education and training;

(ii) credentialing;

(iii) internships and apprenticeships; and

(iv) entrepreneurship opportunities; and

(L) demonstrate an understanding of legal and ethical responsibilities in relation to the field.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502372
Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
Effective date: July 31, 2025
Proposal publication date: May 16, 2025
For further information, please call: (512) 475-1497

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CHAPTER 127. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER DEVELOPMENT AND CAREER AND TECHNICAL EDUCATION

(Editor's note: In accordance with Texas Government Code, §2002.014, which permits the omission of material which is "cumbersome, expensive, or otherwise inexpedient," the figure in the preamble is not included in the print version of the Texas Register. The figure is available in the on-line version of the July 25, 2025, issue of the Texas Register.)

The State Board of Education (SBOE) adopts new §§127.18, 127.31 - 127.44, 127.85, 127.94 - 127.114, 127.145 - 127.154, 127.160 - 127.193, 127.224 - 127.235, 127.241 - 127.260, 127.264 - 127.266, 127.268, 127.294 - 127.300, 127.309 - 127.315, 127.343 - 127.346, 127.351 - 127.357, 127.391 - 127.401, 127.461, 127.462, 127.474 - 127.493, 127.553 - 127.555, 127.561 - 127.568, 127.600 - 127.603, 127.611 - 127.622, 127.665, 127.666, 127.671 - 127.688, 127.720 - 127.727, 127.735 - 127.738, 127.746 - 127.751, 127.758 - 127.769, 127.800 - 127.803, 127.810 - 127.823, 127.865, 127.866, 127.871 - 127.886, and 127.921 - 127.924, concerning Texas Essential Knowledge and Skills (TEKS) for career development and career and technical education (CTE). Adopted new §§127.18, 127.31 - 127.44, 127.85, 127.94 - 127.114, 127.145 - 127.154, 127.160 - 127.193, 127.224 - 127.235, 127.241 - 127.260, 127.264 - 127.266, 127.268, 127.294 - 127.300, 127.309 - 127.315, 127.343 - 127.346, 127.351 - 127.357, 127.391 - 127.401, 127.461, 127.462, 127.474 - 127.493, 127.553 - 127.555, 127.561 - 127.568, 127.600 - 127.603, 127.611 - 127.622, 127.665, 127.666, 127.671 - 127.688, 127.720 - 127.725, 127.735 - 127.738, 127.746 - 127.751, 127.758 - 127.769, 127.800 - 127.803, 127.810 - 127.823, 127.865, 127.866, 127.871 - 127.886, and 127.921 - 127.924 are adopted with changes to the proposed text as published in the February 28, 2025 issue of the *Texas Register* (50 TexReg 1094) and will be republished. Adopted new §127.726 and §127.727 are adopted without changes to the proposed text as published in the February 28, 2025 issue of the *Texas Register* (50 TexReg 1094) and will not be republished. The adopted new sections add existing CTE TEKS from 19 TAC Chapters 127 and 130 that have been repealed to ensure that all CTE TEKS are in the same chapter in administrative rule and easier to locate.

REASONED JUSTIFICATION: In accordance with statutory requirements that the SBOE identify by rule the essential knowledge and skills of each subject in the required curriculum, the SBOE follows a board-approved cycle to review and revise the essential knowledge and skills for each subject.

The TEKS for courses associated with 14 CTE career clusters are codified by subchapter in 19 TAC Chapters 127 and 130. In December 2020, the SBOE began initial steps to prepare for the review and revision of CTE courses in programs of study for the education and training; health science; and science, technology, engineering, and mathematics career clusters. Two additional courses eligible to satisfy a graduation requirement in science were also part of the review. The board approved for second reading and final adoption new TEKS for these courses in November 2021 and January, April, and June 2022.

At the November 2023 SBOE meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in career preparation and entrepreneurship, which became effective February 13, 2024, and were implemented beginning in the 2024-2025 school year. At the April 2024 meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in agribusiness, animal science, plant science, aviation maintenance, and engineering that will be implemented beginning in the 2025-2026 school year.

Due to the structure of 19 TAC Chapter 130, there are not enough sections to add new CTE courses under consideration in their as-

signed subchapters. To accommodate the addition of new and future courses, the board began the process of moving the CTE TEKS from Chapter 130 to Chapter 127 in order to keep all the TEKS together in administrative rule and avoid confusion. In addition, current subchapters in 19 TAC Chapter 127 are being assigned new subchapters within the same chapter. The related implementation sections are being repealed, and implementation information is being added to each individual course.

The proposed repeal of CTE courses in 19 TAC Chapter 130 and proposed revisions to courses in 19 TAC Chapter 127 were approved for first reading and filing authorization at the January 2025 meeting. At the January 2025 SBOE meeting, the SBOE approved adding to the introductions the level of each course identified in a CTE program of study. At the April 2025 SBOE meeting, the board postponed second reading and final adoption of the proposed repeal of remaining CTE TEKS in 19 TAC Chapter 130 and proposed revisions to 19 TAC Chapter 127.

At the January 2025 SBOE meeting, the board discussed an option to develop a new, universal set of CTE TEKS in employability skills that would replace current employability skills and be required to be taught as part of each CTE course. The SBOE approved new §127.15 for first reading and filing authorization at the April 2025 meeting and for second reading and final adoption at the June 2025 meeting. At adoption, a reference to the new employability skills in §127.15 was added to replace the original employability skills embedded within the courses.

Also at the April 2025 meeting, the SBOE determined that the level of a course in a CTE program of study should not be included in the TEKS for the course. At adoption, the program of study levels were removed from each course to align with the SBOE's decision.

Additionally, the following changes were made to the new sections at adoption.

Chapter 127, Subchapter B

New subsection (a)(2) was added in §127.18 to cross reference employability skills in new §127.15.

Section 127.18(b) was amended by deleting the reference to the course program of study level and replacing "Applied Physics and Engineering" with "Physics for Engineering."

Section 127.18(c)(2) referencing the Science, Technology, Engineering, and Mathematics Career Cluster was deleted.

Subsection (d)(1) in §127.18 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter C

New subsection (a)(2) was added in §§127.31 - 127.44 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.31 - 127.44 was amended by deleting references to the course program of study levels.

Section 127.85(b)(2)(B) was amended by adding "and Poultry" after "Livestock."

Section 127.85(b)(2)(C) was amended by replacing "Medical Applications" with "Science."

Subsection (d)(1) in §§127.31 - 127.44 and 127.85 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter D

New subsection (a)(2) was added in §§127.94 - 127.114 and 127.145 - 127.154 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.94 - 127.114 and 127.145 - 127.154 was amended by deleting references to the course program of study level.

Subsection (d)(1) in §§127.94 - 127.114 and 127.145 - 127.154 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

New §127.99(d)(3)(D) was added to read, "describe the factors that affect the purchase and use of buildings." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.108(d)(4)(D) was added to read, "use and apply job-appropriate computer applications for a given task such as printing and plotting elevations, floor plans, and additional presentation documents or illustrations." This student expectation was previously located in the paragraph on employability skills that was deleted.

Chapter 127, Subchapter E

New subsection (a)(2) was added in §§127.160, 127.161, 127.163, 127.165, 127.167, 127.169 - 127.172, 127.174, 127.176, 127.178, 127.180, 127.182, 127.184, 127.186, 127.188 - 127.193, and 127.224 - 127.235 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.160 - 127.193 and 127.224 - 127.235 was amended by deleting references to the course program of study levels.

Subsection (c)(2) in §§127.160 - 127.193 and 127.224 - 127.235 was amended by replacing "Audio/Video" with "Audio Visual."

Subsection (d)(1) in §§127.160 - 127.193 and 127.224 - 127.235 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter F

New subsection (a)(2) was added in §§127.241, 127.243, 127.245 - 127.260, 127.264 - 127.266, 127.268, and 127.295 - 127.300 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.241, 127.243, 127.245 - 127.260, 127.264 - 127.266, 127.268, and 127.295 - 127.300 was amended by deleting references to the course program of study levels.

Subsection (c)(2) in §§127.241 - 127.250 and 127.294 - 127.296 was amended by replacing the previous Business Management and Administration Career Cluster description with the new Business, Marketing, and Finance Career Cluster description.

Subsection (c)(2) in §§127.251 - 127.259 was amended by replacing the previous Finance Career Cluster description with the new Business, Marketing, and Finance Career Cluster description.

Subsection (c)(2) in §§127.260 - 127.268 and 127.297 - 127.300 was amended by replacing the previous Marketing Career Clus-

ter description with the new Business, Marketing, and Finance Career Cluster description.

Subsection (d)(1) in §§127.241, 127.243, 127.245 - 127.260, 127.264 - 127.266, 127.268, and 127.294 - 127.300 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

References to the former Business Management and Administration; Marketing; and Finance Career Clusters were updated to the new Business, Marketing, and Finance Career Cluster.

Chapter 127, Subchapter G

New subsection (a)(2) was added in §§127.309 - 127.315 and 127.343 - 127.346 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.309 - 127.315 and 127.343 - 127.346 was amended by deleting references to the course program of study levels.

Subsection (d)(1) in §§127.309 - 127.315, 127.343 - 127.346, and 127.294 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Additional technical edits were made to reflect the new career cluster title Business, Marketing, and Finance.

Chapter 127, Subchapter H

New subsection (a)(2) was added in §§127.351 - 127.357 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.351 - 127.357 was amended by deleting references to the course program of study levels.

Subsection (d)(1) in §§127.351 - 127.357 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter I

New subsection (a)(2) was added in §§127.391 - 127.401 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.391 - 127.401 was amended by deleting references to the course program of study levels.

Subsection (b) in §127.400 was further amended by updating the prerequisite course title "Engineering Design and Presentation I" to "Engineering Design and Presentation."

Subsection (c)(2) in §§127.391 - 127.401 was amended by replacing the previous Science, Technology, Engineering, and Mathematics Career Cluster description with the Engineering Career Cluster description.

Subsection (d)(1) in §§127.391 - 127.401 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Section 127.401(c)(3) was amended by replacing "Applied Physics and Engineering" with "Physics for Engineering."

Chapter 127, Subchapter J

New subsection (a)(2) was added in §§127.461, 127.462, 127.474 - 127.493, and 127.553 - 127.555 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.461, 127.462, 127.474 - 127.493, and 127.553 - 127.555 was amended by deleting references to the course program of study levels.

Subsection (c)(2) in §§127.462, 127.475, and 127.476 was amended by replacing the previous Science, Technology, Engineering, and Mathematics Career Cluster description with the Health Science Career Cluster description.

Subsection (d)(1) in §§127.461, 127.462, 127.474 - 127.493, and 127.553 - 127.555 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

New §127.488(d)(4)(F) was added to read, "use appropriate medical terminology and abbreviations." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.490(d)(7)(E) was added to read, "demonstrate therapeutic communication appropriate to the situation, including communication with individuals with language differences/barriers and sensory loss." This student expectation was previously located in the paragraph on employability skills that was deleted.

Chapter 127, Subchapter K

New subsection (a)(2) was added in §§127.561 - 127.568 and 127.600 - 127.603 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.561 - 127.568 and 127.600 - 127.603 was amended by deleting references to the course program of study levels.

Subsection (d)(1) in §§127.561 - 127.568 and 127.600 - 127.603 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

New §127.566(d)(1)(D) was added to read, "compose a variety of written documents used in travel and tourism such as itineraries, thank you letters, presentations, and advertisements." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.566(d)(2)(E) was added to read, "summarize how to use the state of the economy to plan products and services." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.566(d)(10)(J) was added to read, "investigate geography and factors that affect the travel and tourism industry." This student expectation was previously located in the paragraph on employability skills that was deleted.

Chapter 127, Subchapter L

New subsection (a)(2) was added in §§127.611 - 127.619, 127.621, 127.665, and 127.666 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.611 - 127.622, 127.665, and 127.666 was amended by deleting references to the course program of study levels.

Subsection (d)(1) in §§127.611 - 127.622, 127.665, and 127.666 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter M

New subsection (a)(2) was added in §§127.671 - 127.679, 127.681, 127.683 - 127.688, 127.720 - 127.727, and 127.735 - 127.738 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.671 - 127.688, 127.720 - 127.727, and 127.735 - 127.738 was amended by deleting references to the course program of study levels.

Subsection (c)(2) in §§127.672 - 127.678 and 127.686 - 127.688 was amended by replacing the previous Science, Technology, Engineering, and Mathematics Career Cluster description with the Information Technology Career Cluster description.

Subsection (d)(1) in §§127.671 - 127.676, 127.678 - 127.688, 127.720 - 127.727, and 127.735 - 127.738 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Subsection (d)(2) in §127.677 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

New §127.671(d)(13) was added to read, "The student applies project management skills to information technology projects. The student is expected to."

New §127.671(d)(13)(A) was added to read, "identify and demonstrate planning strategies such as storyboarding." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.671(d)(13)(B) was added to read, "identify phases of project management, including initiating, planning, executing, monitoring and controlling, and closing a project." This student expectation was previously located in the paragraph on employability skills that was deleted.

New §127.677(d)(1) was added to read, "The student identifies various employment opportunities in the digital forensics field. The student is expected to."

New §127.677(d)(1)(A) was added to read, "investigate the need for digital forensics."

New §127.677(d)(1)(B) was added to read, "identify and discuss certifications for digital forensics careers."

New §127.677(d)(1)(C) was added to read, "identify and describe businesses and government agencies that use digital forensics."

New §127.677(d)(1)(C) was added to read, "identify and describe the kinds of crimes investigated by digital forensics specialists."

Chapter 127, Subchapter N

New subsection (a)(2) was added in §§127.746 - 127.751, 127.758 - 127.763, 127.765 - 127.769, and 127.800 - 127.803 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.746 - 127.751, 127.758 - 127.763, 127.765 - 127.769, and 127.800 - 127.803 was amended by deleting references to the course program of study levels.

Subsection (c)(2) in §§127.746 - 127.751, 127.758 - 127.760, 127.800, and 127.801 was amended by updating the career cluster title to Law and Public Service.

Subsection (c)(2) in §§127.761 - 127.768, 127.802, and 127.803 was amended by replacing the previous Government and Public Administration Career Cluster description with the Law and Public Service Career Cluster description.

Subsection (d)(1) in §§127.746 - 127.751, 127.758 - 127.763, 127.765 - 127.769, and 127.800 - 127.803 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter O

New subsection (a)(2) was added in §§127.810 - 127.818, 127.820 - 127.822, 127.865, and 127.866 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.810 - 127.823, 127.865, and 127.866 was amended by deleting the references to the course level.

Subsection (d)(1) in §§127.810 - 127.818, 127.820 - 127.822, 127.865, and 127.866 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

Chapter 127, Subchapter P

New subsection (a)(2) was added in §§127.871 - 127.886 and 127.921 - 127.924 to cross reference employability skills in new §127.15.

Subsection (b) in §§127.871 - 127.886 and 127.921 - 127.924 was amended by deleting references to the course program of study levels.

Subsection (d)(1) in §§127.871 - 127.886 and 127.921 - 127.924 and associated student expectations related to employability skills were deleted because they were replaced with the cross reference to new employability skills in subsection (a)(2).

The following figure provides a crosswalk between the current TEKS in Chapters 127 and 130 and the new location of those TEKS in Chapter 127.

Figure: 19 TAC Chapter 127 - Preamble

The SBOE approved the new sections for first reading and filing authorization at its January 31, 2025 meeting and for second reading and final adoption at its June 27, 2025 meeting.

In accordance with TEC, §7.102(f), the SBOE approved the new sections for adoption by a vote of two-thirds of its members to specify an effective date earlier than the beginning of the 2025-2026 school year. The earlier effective date will ensure the TEKS are available in their new location in time for districts of innovation with an earlier school start date to implement at the beginning of the school year districts. The effective date is August 1, 2025.

SUMMARY OF COMMENTS AND RESPONSES: The public comment period on the proposal began February 28, 2025, and ended at 5:00 p.m. on March 31, 2025. The SBOE also provided an opportunity for registered oral and written comments at its April and June 2025 meetings in accordance with the SBOE board operating policies and procedures. No public comments were received.

SUBCHAPTER B. HIGH SCHOOL

19 TAC §127.18

STATUTORY AUTHORITY. The new section is adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new section implements Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.18. Scientific Research and Design (One Credit), Adopted 2024.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Biology, and one credit of the following: Physics for Engineering, Chemistry, Integrated Physics and Chemistry (IPC), or Physics. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course. Students may take this course with different course content for a maximum of three credits.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) Scientific Research and Design allows districts and schools flexibility to develop local curriculum to supplement a program of study or coherent sequence. The course has the components of any rigorous scientific or career and technical education (CTE) program of study, including problem identification, investigation design, data collection, data analysis, formulation, and presentation of conclusions. These components are integrated with the CTE emphasis of helping students gain entry-level employment in high-skill, high-wage jobs and/or continue their education.

(3) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

(4) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(5) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(6) Science and social ethics. Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(7) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide tools for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(8) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, other organizations that foster leadership and career development in the profession such as student chapters of related professional associations, or practical, hands-on activities or experiences through which a learner interacts with industry professionals in a workplace, which may be an in-person, virtual, or simulated setting. Learners prepare for employment or advancement along a career pathway by completing purposeful tasks that develop academic, technical, and employability skills.

(9) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field inves-

tigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as measurement and data collection tools, software, sensors, probes, microscopes, cameras, and glassware;

(E) collect quantitative data using the International System of Units (SI) and qualitative data as evidence;

(F) organize quantitative and qualitative data using notebooks, journals, graphs, charts, tables, spreadsheets, and drawings and models;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors to investigate science, technology, engineering, and mathematics careers.

(5) The student develops a proposal that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) establish a rationale and preliminary set of ideas for a research question or questions using organizational tools, collaboration, or research;

(B) perform a literature review and evaluate several examples related to the project;

(C) refine a research question by interacting with professionals in the field of study and document the conversations;

(D) distinguish between descriptive, comparative, or experimental research design methodologies;

(E) develop a research question or questions that are testable and measurable;

(F) justify in writing the significance and feasibility of the project;

(G) generate a materials list and propose a cost analysis; and

(H) use the citation style appropriate to the field of study throughout the documentation.

(6) The student formulates hypotheses to guide experimentation and data collection independently or in a team that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) perform background research on the selected investigative problem;

(B) examine hypotheses generated to guide a research process by evaluating the merits and feasibility of the hypotheses; and

(C) identify the control, independent variable, and dependent variables within the research and justify the purpose of each.

(7) The student develops, implements, and collects data for their investigative designs that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) write the procedure of the experimental design, including a schematic of the lab, materials, set up, ethical considerations, and safety protocols;

(B) conduct the experiment with the independent and dependent variables;

(C) acquire data using appropriate equipment and technology; and

(D) record observations as they occur within an investigation, including qualitative and quantitative observations such as journals, photographic evidence, logs, tables, and charts.

(8) The student organizes and evaluates qualitative and quantitative data obtained through experimentation that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) manipulate data by constructing charts, data tables, or graphs using technology to organize information collected in an experiment;

(B) identify sources of random error and systematic error and differentiate between both types of error;

(C) report error of a set of measured data in various formats such as standard deviation and percent error; and

(D) analyze data using statistical methods to recognize patterns, trends, and proportional relationships.

(9) The student knows how to synthesize valid conclusions from qualitative and quantitative data that centers around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) justify conclusions that are supported by research data;

(B) consider and summarize alternative explanations for observations and results; and

(C) identify limitations within the research process and provide recommendations for additional research.

(10) The student communicates clearly and concisely to an audience of professionals conclusions that center around a scientific or engineering topic or problem within a specific program of study or area of interest. The student is expected to:

(A) develop a plan of action on how to present to a target audience;

(B) review artifacts used in the communication of the presentation for errors, grammar, professional standards, and citations;

(C) develop a professional collection or portfolio of work that includes artifacts such as a journal, proposal, written procedures, methodology, iterations, interviews and check ins with professionals, changes within the experiment, and photographic evidence;

(D) practice a professional presentation with peers and educators using a rubric to measure content, skill, and performance;

(E) incorporate feedback provided by a review panel to document for future improvements or changes; and

(F) communicate data analysis and experimental results of original findings of a research project clearly to an audience of professionals.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502399
Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
Effective date: August 1, 2025
Proposal publication date: February 28, 2025
For further information, please call: (512) 475-1497

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SUBCHAPTER C. AGRICULTURE, FOOD, AND NATURAL RESOURCES

19 TAC §§127.31 - 127.44, 127.85

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.31. Mathematical Applications in Agriculture, Food, and Natural Resources (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. Recommended prerequisite: one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) In Mathematical Applications in Agriculture, Food, and Natural Resources, students will apply knowledge and skills related to mathematics, including algebra, geometry, and data analysis in the context of agriculture, food, and natural resources. To prepare for careers in agriculture, food, and natural resources, students must acquire technical knowledge in the discipline as well as apply academic skills in mathematics. To prepare for success, students need opportunities to reinforce, apply, and transfer their knowledge and skills related to mathematics in a variety of contexts.

(4) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying

the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(3) The student performs mathematical calculations used in agriculture, food, and natural resources. The student is expected to:

(A) add, subtract, multiply, and divide whole numbers, fractions, and decimals in calculations related to agriculture, food, and natural resources;

(B) apply mathematical skills such as measurement, conversion, and data analysis needed for agriculture, food, and natural resources;

(C) find solutions to problems related to agriculture, food, and natural resources by calculating percentages and averages;

(D) convert between English and metric units;

(E) use scientific calculations to determine weight, volume, and linear measurements;

(F) solve word problems using ratios and dimensional analysis; and

(G) interpret data using tables, charts, and graphs.

(4) The student demonstrates mathematics knowledge and skills required to solve problems related to the agriculture, food, and natural resources industries. The student is expected to:

(A) demonstrate use of relational expressions such as equal to, not equal, greater than, and less than in agriculture, food, and natural resources industries such as agribusiness; animal; environmental service; food products and processing; natural resources; plant; and power, structural, and technical systems;

(B) apply statistical and data analysis to solve problems related to agriculture, food, and natural resources industries such as agribusiness; animal; environmental service; food products and processing; natural resources; plant; and power, structural, and technical systems;

(C) analyze mathematical problem statements for missing or irrelevant data essential to agriculture, food, and natural resources industries such as agribusiness; animal; environmental service; food products and processing; natural resources; plant; and power, structural, and technical systems;

(D) construct and analyze charts, tables, and graphs from functions and data generated in agriculture, food, and natural resources industries such as agribusiness; animal; environmental service; food products and processing; natural resources; plant; and power, structural, and technical systems;

(E) analyze data using measures of central tendency when interpreting operational documents in agriculture, food, and natural resources industries such as agribusiness; animal; environmental service; food products and processing; natural resources; plant; and power, structural, and technical systems; and

(F) use mathematical operations and knowledge of relationships to solve problems such as the calculation of gallons of water from inches of rain, acres of ground water, liquid and gaseous volumes, and conversion of units; calculation of caloric value, parts per million of restricted ingredients, conversion of measurements, and U.S. Department of Agriculture (USDA) grades; estimation of wildlife populations and pulpwood yields; and calculation of mapping data inherent to systems of agriculture or agribusiness.

(5) The student demonstrates mathematical knowledge and skills required to solve problems related to agribusiness systems and related career opportunities. The student is expected to:

(A) use mathematical operations and knowledge of relationships to solve daily problems related to record keeping such as profit/loss statements, income statements, capital asset inventories, insurance, risk management, lease agreements, employee payroll and

benefits, and investments and loan, real estate contract, or tax documentation in agribusiness systems;

(B) demonstrate knowledge of algebraic applications and linear and exponential functions related to concepts such as simple interest, compound interest, maturity value, tax rates, depreciation, production analysis, market trends, investments, and price determination in agribusiness systems;

(C) use statistical and data analysis, including counts, percentages, central tendency, and prediction, to evaluate agribusiness systems data such as demographic, production, consumption, weather, and market data; and

(D) report statistical data related to concepts such as pricing, market trends, commodity prices, exports and imports, supply and demand, and production yields numerically or graphically.

(6) The student demonstrates mathematical knowledge and skills required to solve problems related to animal systems and related career opportunities. The student is expected to:

(A) use mathematical operations and knowledge of relationships to solve problems such as the calculation of purchasing, marketing, and production costs; housing requirements; conversion of units; average daily gain; topical and injectable medication dosages; USDA grades; feeding schedules; volumes; stocking rates; and breeding and gestation cycles related to animal systems;

(B) demonstrate knowledge of algebraic applications related to animal system calculations such as ration formulation using the Pearson Square, percent homozygosity, heritability, USDA grades, gene frequency, cost per unit of nutrient, and weaning weight ratio;

(C) use geometric principles to solve problems such as the use of right triangles for perpendicular cross fencing and the calculation of square footage for housing requirements; acreage for normal and irregular shaped pastures; feed bin volume based upon shape such as cylinder, cone, cube, or pyramid; and housing volume for ventilation related to animal systems; and

(D) use statistical and data analysis to evaluate animal systems data reported numerically or graphically such as birth weight, weaning weight, days to market weight, expected progeny differences, feed efficiencies, birth type, litter size, presence or absence of genetic abnormality, milk production, sow productivity index, and veterinary costs or records.

(7) The student demonstrates mathematical knowledge and skills required to solve problems related to environmental service systems and related career opportunities. The student is expected to:

(A) demonstrate knowledge of algebraic applications to create solutions to problems such as the calculation of acre feet of water, water volume in ponds, water well volume, water pressure friction loss, flow rate, total head pressure, pump efficiency, soil solids volume, and soil degree of saturation related to environmental service systems;

(B) use geometric principles to solve problems such as calculating acreage for normal and irregular shaped pastures and slope of land, planning runoff drainage structures, and applying differential leveling techniques related to environmental service systems; and

(C) use statistical and data analysis to evaluate environmental service systems data reported numerically or graphically such as rainfall, soil classifications, groundwater levels, recycling activities, and pollution rates.

(8) The student demonstrates mathematical knowledge and skills required to solve problems related to food products and processing systems and related career opportunities. The student is expected to:

(A) demonstrate knowledge of algebraic applications to solve problems such as the calculation of exponential growth of bacteria, contribution margin in processing, percentage of weight loss in packaged food, percentage of water absorption in packaged food, and microbe analysis following pasteurization related to food products and processing systems;

(B) use geometric principles to solve problems such as the calculation of packaging requirements, construction of food storage structures and containers, liquid transfer materials, and vessels design and volume related to food products and processing systems; and

(C) use statistical and data analysis to evaluate food products and processing systems data reported numerically or graphically such as governmental regulations, hazard analysis, critical control points data, taste tests, quality assurance data, and industry packing practices.

(9) The student demonstrates mathematical knowledge and skills required to solve problems related to natural resource systems and related career opportunities. The student is expected to:

(A) demonstrate knowledge of algebraic applications to solve problems such as the calculation of mean harvest area, calibration of pesticides, and the Doyle Log Rule related to natural resource systems;

(B) use geometric principles to solve problems such as planning and construction of structures related to wildlife and fisheries management, determination of lumber volume in given tree stock, and calculation of tank volume for chemical application related to natural resource systems; and

(C) use statistical and data analysis to evaluate natural resource systems data reported numerically or graphically such as Geographic Information Systems and Global Positioning Systems data, weather-related data, and data related to wildlife and habitat.

(10) The student demonstrates mathematical knowledge and skills required to solve problems related to plant systems and related career opportunities. The student is expected to:

(A) use mathematical operations and knowledge of relationships to solve problems such as the calculation of crop yields, crop loss, grain drying requirements, grain weight shrinkage, germination rates, greenhouse heating, and cooling and fertilizer application rates related to plant systems;

(B) demonstrate knowledge of algebraic applications to solve problems such as the calculation of grain handling efficiency, harvesting capacity, crop rotation, seeding rates, fertilizer nutrient requirements, and greenhouse ventilation related to plant systems;

(C) use geometric principles for the analysis of problems such as planning grain storage structures and calculating volume of grain storage vessels, grain handling volume, greenhouse capacity, and regular and irregular shaped planting bed size related to plant systems; and

(D) use statistical and data analysis to evaluate plant systems data such as crop yields, Global Information Systems data, plant growth data, and climate data.

(11) The student demonstrates mathematical knowledge and skills required to solve problems related to power, structural, and technical systems and related career opportunities. The student is expected to:

(A) use mathematical operations and knowledge of relationships to solve problems such as the calculation of gear ratio, fuel efficiency, construction costs, project layout, energy costs, unit conversions, and bid preparation and labor-related calculations related to power, structural, and technical systems;

(B) demonstrate knowledge of algebraic applications such as the calculation of strength of magnetism, chain or belt tension, horsepower, Ohm's Law, hydraulic multiplication of force, stresses using Mohr's Circle, and tensile strength related to power, structural, and technical systems;

(C) use geometric principles for the evaluation of problems such as rafter length, land measurement, differential leveling, concrete volume, heating, ventilating, and air conditioning requirements and creation of structural drawings related to power, structural, and technical systems;

(D) use statistical and data analysis to evaluate power, structural, and technical systems data such as construction cost data; equipment maintenance; heating, ventilation, and air conditioning efficiencies; engine performance; and labor costs; and

(E) use geometric principles to develop and implement a plan for construction of a project such as a trailer, an agricultural structure, a storage facility, or a fence.

§127.32. Energy and Natural Resource Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Energy and Natural Resource Technology examines the interrelatedness of environmental issues and production agriculture. Students will evaluate the environmental benefits provided by sustainable resources and green technologies. Instruction is designed to allow for the application of science and technology to measure environmental impacts resulting from production agriculture through field and laboratory experiences. To prepare for careers in environmental service systems, students must attain academic skills and knowledge, acquire advanced technical knowledge and skills related to environmental service systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student uses instructional time to conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices in a supervised agriculture experience. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations in a supervised agriculture experience; and

(B) use accepted procedures for the use and conservation of resources and for the safe handling of materials.

(3) The student discusses the importance and scope of natural resources. The student is expected to:

(A) identify various types of natural resources;

(B) discuss renewable and non-renewable energy resources and their impact on the environment;

(C) analyze the impacts of natural resources and their effects on the agricultural economy; and

(D) map the geographic and demographic uses of natural resources.

(4) The student identifies water use and management in agricultural settings. The student is expected to:

(A) identify the distribution and properties of water in the hydrologic cycle;

(B) identify agricultural uses of water such as recycling;

(C) discuss how agricultural uses may impact water resources;

(D) define point source and non-point source pollution;

(E) identify sources of point source and non-point source pollution associated with agriculture;

(F) evaluate how the different agricultural water uses may impact water availability; and

(G) research water use legislation.

(5) The student describes air quality associated with agricultural production. The student is expected to:

(A) describe the components of the atmosphere and the atmospheric cycle;

(B) define air pollution;

(C) analyze air quality legislation;

(D) identify sources and effects of air pollution from agricultural production;

(E) discuss different emission management strategies; and

(F) identify common air pollution controls used in agricultural production.

(6) The student examines soil erosion as related to agricultural production. The student is expected to:

(A) identify agricultural production practices that can contribute to soil erosion;

(B) analyze effects of soil erosion;

(C) discuss the legal aspects of soil erosion; and

(D) identify soil erosion control methods and programs.

(7) The student explains the effects of natural resource use. The student is expected to:

(A) identify the progression of use of natural resources leading to environmental degradation;

(B) explain the impact of human population dynamics on the environment;

(C) discuss the abuse of natural resources; and

(D) communicate the environmental consequences of natural resource use such as the impact on living organisms.

§127.33. Advanced Energy and Natural Resource Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisites: a minimum of one credit from the courses in the Agriculture, Food, and Natural Resources Career Cluster and Energy and Natural Resource Technology. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Advanced Energy and Natural Resource Technology is designed to explore the interdependency of the public and natural resource systems related to energy production. In addition, renewable, sustainable, and environmentally friendly practices will be explored. To prepare for careers in the field of energy and natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to energy and natural resources and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student uses instructional time to conduct field and laboratory investigations using safe, environmentally appropriate, and ethical practices in a supervised agriculture experience. The student is expected to:

(A) demonstrate safe practices during field and laboratory investigations in a supervised agriculture experience; and

(B) apply accepted procedures for the use and conservation of resources and for the safe handling of materials.

(3) The student determines and evaluates the importance and scope of energy and natural resources. The student is expected to:

(A) identify various types of natural resources;

(B) identify renewable, non-renewable, and sustainable energy resources and determine their availability;

(C) evaluate the impacts of energy production on natural resources and the agricultural economy; and

(D) analyze the geographic and demographic uses of natural resources.

(4) The student analyzes ethical issues related to natural resource management and energy production. The student is expected to:

(A) compile examples of different lease agreements used for leasing minerals and natural resources;

(B) interpret legal documents related to natural resource management and energy production; and

(C) compare and contrast public and industry interest in natural resource management.

(5) The student understands the role of natural resource management and energy production policies at the local, state, and national levels. The student is expected to:

(A) identify policy affecting the use of natural resources;

(B) identify policy affecting energy production;

(C) research controls that protect Earth's natural resources;

(D) identify state and federal agencies that have natural resource management and energy production responsibilities; and

(E) define the roles of government, society, and property owners in the development of natural resource management and energy production policy.

(6) The student recognizes the purpose of land use planning for natural resource management and energy production. The student is expected to:

(A) discuss advantages and disadvantages of land use planning for natural resource management and energy production; and

(B) compare and contrast land use policy trends within the state.

(7) The student identifies water use and wastewater management. The student is expected to:

(A) identify municipal, industrial, and agricultural uses of water;

(B) explore and develop water recycling opportunities;

(C) evaluate sources of point and non-point source pollution associated with municipal, industrial, and agricultural uses;

(D) describe effective management practices commonly used to abate point and non-point sources of pollution;

(E) analyze how water use impacts water availability;

(F) research water use legislation;

(G) discuss water quality policy and how it affects the decisions made in agricultural production; and

(H) discuss the interaction of energy production and water resources.

(8) The student describes air quality associated with natural resource management and energy production. The student is expected to:

(A) research air quality legislation;

(B) identify sources and effects of air pollution;

(C) discuss different emission management strategies; and

(D) identify air pollution controls used in energy production.

(9) The student examines soil erosion as related to natural resource management and energy production. The student is expected to:

(A) examine the effects of natural resource management and energy production on soil erosion;

(B) analyze the components and functions of soils;

(C) appraise soil and water conservation programs; and

(D) compare soil erosion control methods.

(10) The student analyzes the identification, handling, storing, and disposing of waste and hazardous materials. The student is expected to:

(A) classify types of waste and hazardous materials;

(B) research legislation related to waste and hazardous materials;

(C) select appropriate entities responsible for waste and hazardous material management; and

(D) describe safe handling, storing, and disposal of waste materials such as composting and recycling.

(11) The student learns the processes for producing energy and green products from agricultural, biomass, fossil fuel, wind, solar, and geothermal sources. The student is expected to:

(A) identify agricultural and silvicultural crops and bio-products suitable for renewable production;

(B) discuss production processes for agricultural- and silvicultural-based bio-products;

(C) describe the fundamentals for non-renewable resource recovery;

(D) analyze the effects of non-renewable resource recovery methods and the environmental considerations associated with each method such as environmentally friendly alternatives;

(E) analyze the advantages and disadvantages of wind-generated energy;

(F) identify public policy considerations associated with transmission line construction to transport wind-generated energy;

(G) locate areas in the state that have geothermal energy production potential;

(H) explain the benefits of geothermal energy;

(I) identify solar energy systems and describe the function of each; and

(J) identify the environmental considerations associated with biofuels.

§127.34. Food Technology and Safety (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Food Technology and Safety examines the food technology industry as it relates to food production, handling, and safety. To prepare for careers in value-added and food processing systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to value-added and food processing and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student explains the impact of food science systems. The student is expected to:

(A) explain the significance of food science systems;

(B) define trends in food production, world population, and supply and demand for food products;

(C) research trends in animal and food science research; and

(D) evaluate the relationship between biotechnology and the food science industry.

(3) The student analyzes the nutritive value of food constituents. The student is expected to:

(A) define the terms used in food technology;

(B) compare and contrast the nutritive value of food groups; and

(C) apply data and measurements to solve a problem related to food processing.

(4) The student identifies procedures and regulations for sanitation and safety in the food industry. The student is expected to:

(A) identify food industry inspection standards, including hazard analysis and critical control points;

(B) describe procedures for insect and rodent control;

(C) identify appropriate chemicals used in the food industry;

(D) assess conditions with regard to safety and health; and

(E) identify specific regulation for organic animal products, grains, and produce.

(5) The student identifies safety and governmental regulations involved in the processing and labeling of foods. The student is expected to:

(A) research regulations dealing with preserving red meat, poultry, and fish;

(B) describe packaging, labeling, and storage requirements for red meat, poultry, and fish;

(C) explain the impact of temperature in food preservation;

(D) compare and contrast packaging requirements; and

(E) evaluate cultural practices and exotic species in food harvesting and processing.

(6) The student demonstrates an understanding of the trends and issues important to careers in the food science industry by comparing and contrasting issues affecting the food science industry, including biotechnology, employment, safety, environmental, and animal welfare issues. The student is expected to:

(A) select solutions for different environmental issues;

(B) identify issues affecting food science;

(C) research history and policies related to food science issues;

(D) analyze and defend solutions for different environmental issues; and

(E) apply economic principles such as supply, demand, and profit to food science systems.

(7) The student describes the processing, packaging, quality analysis, and marketing of red meats and their by-products. The student is expected to:

(A) describe preparing livestock carcasses for market;

(B) describe the U.S. Department of Agriculture's inspection and grading procedures;

(C) identify wholesale and retail cuts;

(D) evaluate and grade beef, pork, lamb, and goat carcasses and wholesale cuts; and

(E) identify methods of fabricating and marketing processed meats.

(8) The student describes the processing, packaging, quality analysis, and marketing of eggs, poultry, and fish and their by-products. The student is expected to:

(A) describe processing techniques;

(B) demonstrate poultry and retail cuts evaluation;

(C) identify grades and classes of eggs, poultry, fish, and seafood;

(D) fabricate specialty and value-added products;

(E) demonstrate an understanding of quality and portion control procedures; and

(F) describe marketing procedures for eggs, poultry, fish, and seafood.

(9) The student describes the processing, packaging, quality analysis, and marketing of fruits, nuts, and vegetables and their by-products. The student is expected to:

(A) identify, classify, and grade fruits, nuts, and vegetables;

(B) demonstrate trimming, washing, waxing, peeling, blanching, and other marketing techniques;

(C) research critical issues in transporting, receiving, and storing fruits, nuts, and vegetables; and

(D) discuss preserving, packaging, and storing fruits, nuts, and vegetables.

(10) The student describes the processing, packaging, quality analysis, and marketing of milk and dairy products for distribution. The student is expected to:

(A) describe methods of preparing milk for processing;

(B) evaluate methods of processing milk and dairy products;

(C) identify dairy products, including cultured milk products and frozen dairy desserts; and

(D) process, classify, and grade cheese.

§127.35. Food Processing (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Food Technology and Safety. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Food Processing focuses on the food processing industry with special emphasis on the handling, processing, and marketing of food products. To prepare for careers in food products and processing systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student knows the relationship of the food processing industry to the free enterprise system. The student is expected to:

(A) explain the importance of the food processing industry in the free enterprise system; and

(B) explain trends in the consumption of food products.

(3) The student understands consumer satisfaction issues. The student is expected to:

(A) practice equipment maintenance and sanitation procedures;

(B) explain the factors that affect food palatability;

(C) fabricate red meat, poultry, game, and fish into wholesale and retail cuts; and

(D) demonstrate work ethics, customer relations skills, and management competencies consistent with industry standards.

(4) The student understands quality control issues in food processing. The student is expected to:

(A) practice procedures relating to the safe manufacture of foods through hygienic food handling and processing;

(B) develop and maintain sanitation schedules;

(C) describe hazard analysis and critical control point implementation issues;

(D) research food safety laws; and

(E) describe solutions for different environmental issues.

(5) The student identifies marketing considerations for food processing. The student is expected to:

(A) practice methods of merchandising red meat, poultry, game, fish, and their by-products;

(B) identify, select, and grade meat;

(C) develop food preservation programs using appropriate food preservation methods;

(D) explain the impact of temperature in food preservation;

(E) compare and contrast preservation packaging such as film, plastic, and cans;

(F) describe harvest and inspection techniques to process food products and analyze food product options; and

(G) identify specific criteria for organic food processing and marketing.

§127.36. Wildlife, Fisheries, and Ecology Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Wildlife, Fisheries, and Ecology Management examines the management of game and non-game wildlife species, fish, and aquacrops and their ecological needs as related to current agricultural practices. To prepare for careers in natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student analyzes the importance of wildlife, with an emphasis on use and management. The student is expected to:

(A) analyze the importance of wildlife, fisheries, and ecology management;

(B) discuss the history of wildlife, fisheries, and ecology management;

(C) discuss policies, laws, and the administration of wildlife, fisheries, and ecology management; and

(D) analyze the economic impact of public recreation.

(3) The student knows the scientific basis of and applies concepts related to wildlife management. The student is expected to:

(A) analyze the basic ecological concepts of game management;

(B) identify game, non-game, upland, and migratory game birds, waterfowl, furbearers, freshwater and saltwater fish, predators, and protected endangered species;

(C) describe and assess the management of wildlife populations;

(D) identify diseases and parasites impacting wildlife species;

(E) discuss the appropriate method of reporting disease and parasite outbreaks;

(F) identify plants impacting aquaculture and wildlife management practices; and

(G) discuss habitat and food plot management to benefit aquaculture and wildlife species.

(4) The student knows the interrelationship between various aspects of wildlife and outdoor public use management. The student is expected to:

(A) discuss the importance and role of the Wildlife Management Areas of Texas in the management of private and public lands;

(B) identify laws and regulations regarding the use of wildlife resources;

(C) apply laws and regulations regarding recreation safety such as angler, archer, boater, and hunter safety;

(D) compare and contrast public and private land use;

(E) identify appropriate safety certification requirements;

(F) recognize precautions to use when interfacing with the public concerning regulations and law enforcement;

(G) describe security issues for closed and restricted areas;

(H) recognize potential threat situations for the public of dangers on public and private lands;

(I) recognize the role of law enforcement; and

(J) summarize wildlife and fish harvest techniques and procedures.

(5) The student examines natural cycles and ecological concepts. The student is expected to:

(A) explain the hydrologic, nitrogen, carbon, and nutrient cycles;

(B) evaluate the impact of natural cycles on succession;

(C) analyze the effects of natural cycles on population dynamics;

(D) distinguish between primary and secondary producers;

(E) compare and contrast predator-prey relationships;

(F) evaluate the effects of pollution sources; and

(G) evaluate riparian zones.

(6) The student applies cartographic skills to natural resource activities. The student is expected to:

(A) compare and contrast types of maps;

(B) interpret map features and legends;

(C) compare map scale to actual distance;

(D) evaluate elevation and terrain features from topographic maps;

(E) use land survey and coordinate systems; and

(F) locate position and interpret images using a geospatial interface.

(7) The student evaluates planning data by monitoring natural resource status. The student is expected to:

(A) identify resource inventory and population studies;

(B) devise sample plots and points;

(C) identify and locate resources;

(D) interpret data concerning resource availability and health;

(E) organize databases of resource data; and

(F) create a technical report.

(8) The student analyzes various natural resource enhancement techniques using scientific knowledge. The student is expected to:

(A) develop a riparian zone enhancement technique plan;

(B) evaluate wildlife habitat enhancement plans; and

(C) evaluate public use and recreation area enhancement plans.

(9) The student demonstrates concepts related to optimum production. The student is expected to:

(A) discuss the importance and progress of aquaculture as an emerging industry;

(B) describe nutritional requirements of aquaculture production;

(C) identify requirements for optimum growth of species-specific aqua crops/aquaculture products; and

(D) identify appropriate treatments for diseases and parasites impacting wildlife species and aquaculture.

§127.37. Forestry and Woodland Ecosystems (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Forestry and Woodland Ecosystems examines current management practices for forestry and woodlands. Special emphasis is given to management as it relates to ecological requirements and how these practices impact the environment. To prepare for careers in natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student describes the principles of forestry and woodland ecosystems. The student is expected to:

(A) describe the historical and economic significance of forestry;

(B) illustrate tree anatomy and morphology;

(C) differentiate between species of trees;

(D) classify forest and woodland soils;

(E) describe silviculture;

(F) compare and contrast forest and woodland ecosystems;

(G) describe photosynthesis and respiration as they relate to forest and woodland species;

(H) describe watershed management as it relates to forest and woodland ecosystems;

(I) describe sexual and asexual reproduction in forest and woodland species;

(J) define succession; and

(K) compare natural and managed forests and woodlands.

(3) The student demonstrates forestry biometrics skills. The student is expected to:

(A) calculate tree volume;

(B) estimate timber growth and yield;

(C) evaluate forest and woodland quality by cruising timber stands; and

(D) scale logs to calculate their quality and volume.

(4) The student demonstrates knowledge of forestry management skills. The student is expected to:

(A) identify forestry management techniques;

(B) discuss multiple-use possibilities for forest and woodlands areas; and

(C) develop a control plan for destructive agents such as fire, insects, and disease.

(5) The student identifies softwood and hardwood forest management and use practices. The student is expected to:

(A) identify principles of forestry economics;

(B) research sources of forestry management assistance;

(C) identify harvesting practices and equipment;

(D) describe merchandising practices; and

(E) evaluate research in forestry and wood technology.

(6) The student describes the role of wood technology in forest product development. The student is expected to:

(A) compare timber manufacturing processes and products; and

(B) discuss research and development issues in forestry and wood technology.

(7) The student applies cartographic skills to natural resource activities. The student is expected to:

(A) compare and contrast types of maps;

(B) interpret map features and legends;

(C) compare map scale to actual distance;

(D) evaluate elevation and terrain features from topographic maps;

(E) use land survey and coordinate systems; and

(F) locate position and interpret images using a geospatial interface.

§127.38. Range Ecology and Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Range Ecology and Management is designed to develop students' understanding of rangeland ecosystems and sustainable forage production. To prepare for careers in environmental and natural resource systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to environmental and natural resources, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student develops an understanding of the rangeland ecosystem. The student is expected to:

(A) describe ecology, photosynthesis, energy flow, and climax vegetation;

(B) describe the impact of rangeland on the water cycle and water quality; and

(C) determine capabilities and limitations of rangelands.

(3) The student develops an understanding of rangeland as a dynamic, living, and changeable system. The student is expected to:

(A) explain the relationship of rangeland to the environment;

(B) discuss the interrelationships among water, alternative use, carrying capacity, and population;

(C) identify and classify native, non-native, and invasive plants and animals in the rangeland ecosystem;

(D) explore the use of rangeland plants as alternative energy sources;

(E) develop an understanding of the role of rangeland in water recharge and conservation; and

(F) recognize the importance of successful rangeland ecology practices.

(4) The student analyzes the biotic and abiotic components of a rangeland. The student is expected to:

(A) discuss components of rangeland with an emphasis on soil;

(B) determine components of rangeland with an emphasis on topography; and

(C) classify range sites by soil properties;

(5) The student develops an understanding of the dynamic process of a renewable rangeland resource. The student is expected to:

(A) determine range condition based on plant populations;

(B) compare and contrast rangeland condition trends; and

(C) formulate methods to improve range conditions.

(6) The student identifies methods of maintaining and improving rangeland for livestock management. The student is expected to:

(A) identify plants beneficial to livestock;

(B) identify plant species harmful to livestock;

(C) analyze how livestock use range plants; and

(D) discuss livestock grazing management.

(7) The student identifies methods of maintaining and improving rangeland for wildlife management. The student is expected to:

(A) identify plants beneficial to wildlife;

(B) identify plants species harmful to wildlife;

(C) analyze how wildlife species use range plants; and

(D) discuss wildlife grazing management.

(8) The student develops an understanding of rangeland management as it relates to global concerns. The student is expected to:

(A) examine how rangeland characteristics affect aquifers;

(B) analyze how rangeland characteristics affect the environment;

(C) analyze how rangeland management affects the environment; and

(D) evaluate the impact of energy production systems on rangelands.

§127.39. Landscape Design and Management (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Landscape Design and Management is designed to develop an understanding of landscape design and management techniques and practices. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student identifies environmental, aesthetic, and financial benefits of landscaped sites. The student is expected to:

(A) assess soil characteristics and environmental conditions;

(B) assess site for local conditions such as property lines, easement restrictions, and location of public utilities;

(C) complete a site analysis checklist;

(D) produce a site sketch using graphic design equipment or software;

(E) identify plants used in designing landscapes;

(F) identify structures and hardscape materials used in designing landscapes;

(G) create landscape designs demonstrating the application of design elements and principles; and

(H) analyze different landscape design styles and identify the different aesthetic and environmental factors of each style.

(3) The student performs landscape business procedures. The student is expected to:

(A) demonstrate skills for interviewing potential clients;

(B) develop landscape ideas from a checklist;

(C) prepare cost estimates and schedules for landscaping services, including materials, labor, and business costs; and

(D) analyze service contracts.

(4) The student analyzes the cost and maintenance of tools and equipment used in the landscape industry. The student is expected to:

(A) identify, store, and maintain landscaping hand tools and power equipment;

(B) analyze costs associated with purchasing and maintaining landscaping hand tools and power equipment;

(C) assess different landscape irrigation systems for efficiency, application, and environmental impact;

(D) identify common irrigation system components and materials; and

(E) examine local and state regulations affecting irrigation systems.

(5) The student performs landscape installation services. The student is expected to:

(A) prepare landscape sites for installation; and

(B) install landscape plants and structures using proper installation techniques.

(6) The student performs landscape maintenance services. The student is expected to:

(A) identify and demonstrate proper pruning techniques for different plant materials;

(B) recognize methods for renovating existing landscapes;

(C) analyze nutritional needs of plants;

(D) develop fertilization plans that address plant needs and environmental concerns;

(E) examine Integrated Pest Management in assessing an insect, pathogen, or weed problem;

(F) use pesticide application techniques and equipment properly;

(G) explain pesticide labeling and safety data sheets; and

(H) demonstrate lawn management techniques.

§127.40. Turf Grass Management (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Turf Grass Management is designed to develop an understanding of turf grass management techniques and practices. To prepare for careers in horticultural systems, students must attain academic skills and knowledge, acquire technical knowledge and skills related to horticultural systems and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student identifies the environmental, aesthetic, and financial benefits of turf grass in residential, commercial, and athletic settings. The student is expected to:

(A) assess sites for environmental factors that impact turf grass establishment and management such as soil type, soil pH, and elevation differences;

(B) develop a site assessment checklist; and

(C) develop a site preparation plan.

(3) The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass establishment. The student is expected to:

(A) identify turf grass varieties and cultivars that fulfill site requirements;

(B) identify pests and pathogens of turf grasses;

(C) identify common weeds found in turf grasses;

(D) determine the importance of site grading for water movement;

(E) determine the importance of soil compaction on turf grass establishment;

(F) reduce impact of compaction using aeration methods;

(G) compare establishment procedures such as seeding, sodding, sprigging, and hydromulching; and

(H) explain the importance of turf grass installation timing.

(4) The student identifies and implements common cultural and physiological requirements for cool and warm season turf grass maintenance. The student is expected to:

(A) explain and demonstrate mowing heights;

(B) explain the principle of mowing frequency;

(C) compare residential, commercial, and athletic turf maintenance needs;

(D) determine turf grass irrigation requirements;

(E) analyze and address thatch accumulation in turf grass;

(F) analyze nutritional needs of turf grass;

(G) develop fertilization plans that address turf grass needs and environmental concerns;

(H) examine Integrated Pest Management in assessing an insect, pathogen, or weed problem;

(I) use turf grass pesticide application techniques and equipment properly; and

(J) explain turf grass pesticide labeling and safety data sheets.

(5) The student performs turf grass management business procedures. The student is expected to:

(A) assess the needs of prospective clients;

(B) analyze material, labor, and business costs related to turf grass sites;

(C) develop and analyze service contracts and maintenance schedules;

(D) prepare a cost estimate for establishing a turf grass site, including materials and labor; and

(E) prepare a cost estimate for maintaining a turf grass site, including materials and labor.

(6) The student manages turf grass maintenance equipment. The student is expected to:

(A) identify, store, and maintain turf grass hand tools and power equipment;

(B) analyze the costs associated with turf grass hand tools and power equipment; and

(C) analyze components of turf grass irrigation systems.

§127.41. Agricultural Mechanics and Metal Technologies (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Agriculture, Food, and Natural Resources. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Agricultural Mechanics and Metal Technologies is designed to develop an understanding of agricultural mechanics as it relates to safety and skills in tool operation, electrical wiring, plumbing, carpentry, fencing, concrete, and metal working techniques. To prepare for careers in agricultural power, structural, and technical systems, students must attain academic skills and knowledge; acquire technical knowledge and skills related to power, structural, and technical agricultural systems and the industry; and develop knowledge and skills regarding career opportunities, entry requirements, industry certifications, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student follows operating instructions for tools and equipment to perform a given task. The student is expected to:

(A) select, use, maintain, and store appropriate hand tools to perform a given task;

(B) select, use, maintain, and store appropriate power equipment such as tools powered by electric, pneumatic, and internal combustion engines; and

(C) select and use measuring and marking devices.

(3) The student identifies and performs electric wiring skills. The student is expected to:

(A) identify principles of electricity and wiring terminology;

(B) install electric wiring components and fixtures to comply with governmental regulations and applicable codes; and

(C) maintain electric motors.

(4) The student performs plumbing skills. The student is expected to:

(A) identify and use plumbing tools; and

(B) identify plumbing fixtures.

(5) The student performs concrete construction skills. The student is expected to:

(A) project cost estimates for materials; and

(B) form and pour concrete slabs.

(6) The student performs carpentry skills. The student is expected to:

(A) identify materials used in agricultural construction;

(B) identify elements of a cost estimate and prepare a bid package for a planned project;

(C) demonstrate basic carpentry skills; and

(D) paint and protect a project with coatings.

(7) The student identifies fencing methods. The student is expected to:

(A) select fencing materials; and

(B) plan and install fences.

(8) The student performs appropriate cold and hot metal techniques. The student is expected to:

(A) identify types of metal;

(B) cut, file, shape, and drill metal;

(C) select and operate oxy-fuel welding and cutting equipment to meet standards;

(D) select and operate electric-arc welding equipment to meet standards; and

(E) perform specialty welding and cutting techniques to meet standards.

(9) The student applies processes relating to assembly of equipment in agricultural systems operations. The student is expected to:

(A) select, use, and maintain appropriate tools, equipment, and facilities; and

(B) identify and determine properties, types, and uses of metal.

(10) The student plans and performs cost-effective construction techniques. The student is expected to:

(A) analyze site, equipment, and permit requirements;

(B) operate computer-aided drafting design software;

(C) develop, read, and interpret designs and sketches;

(D) estimate material needs and costs;

(E) measure, mark, and cut material; and

(F) perform specialized nonmetallic fabrication techniques.

§127.42. Agricultural Structures Design and Fabrication (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Agricul-

tural Mechanics and Metal Technologies. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) In Agricultural Structures Design and Fabrication, students will explore career opportunities, entry requirements, and industry expectations. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural structures design and fabrication. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student demonstrates principles of facilities design and fabrication related to agricultural structures. The student is expected to:

(A) develop building plans;

(B) select site and locate agricultural building placement;

(C) estimate materials and costs needed for construction with an emphasis on renewable and eco-friendly materials;

(D) select appropriate environmental control systems with a special emphasis on green technology; and

(E) use computer-aided design software as appropriate.

(3) The student explores the different types of power systems used in agricultural structures. The student is expected to:

(A) define the terms and principles of electricity;

(B) estimate electrical needs and loads;

(C) plan installations using local codes and National Electric Code guidelines;

(D) demonstrate the use of various meters;

(E) select circuit wiring materials and supplies;

(F) demonstrate electrical systems repair; and

(G) explore alternative power systems, including solar, wind, and biomass.

(4) The student constructs agricultural structures using appropriate technology. The student is expected to:

(A) demonstrate appropriate use of surveying equipment;

(B) demonstrate and apply Geographic Information System (GIS) and Global Positioning System (GPS) principles;

(C) reinforce, place, finish, and cure concrete;

(D) plan, establish, and maintain water-management systems;

(E) identify non-traditional structural building techniques, including industry trends that are eco-friendly;

(F) discuss the use of masonry and drywall construction;

(G) install doors, windows, and roofing materials; and

(H) install plumbing equipment and fixtures to comply with governmental regulations and applicable codes.

(5) The student demonstrates metal construction techniques related to agricultural design and fabrication of structures. The student is expected to:

(A) explain the operations of safe oxy-fuel cutting; and

(B) demonstrate safe electrical welding.

§127.43. Agricultural Equipment Design and Fabrication (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Agricultural Mechanics and Metal Technologies. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) In Agricultural Equipment Design and Fabrication, students will acquire knowledge and skills related to the design and fabrication of agricultural equipment. To prepare for careers in mechanized agriculture and technical systems, students must attain knowledge and skills related to agricultural equipment design and fabrication. To prepare for success, students reinforce, apply, and transfer their academic knowledge and technical skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student demonstrates principles of design and fabrication related to agricultural machinery and equipment. The student is expected to:

(A) develop project construction plans;

(B) select appropriate construction and finish materials for different types of agricultural equipment;

(C) estimate materials and costs needed for construction with an emphasis on renewable and eco-friendly materials;

(D) construct one or more agricultural equipment projects using measuring and mechanical skills;

(E) integrate a logical order of operations into the construction of an agricultural equipment project; and

(F) use computer-aided design software.

(3) The student plans, constructs, and maintains fences, corrals, and other agricultural enclosures. The student is expected to:

(A) select site and locate enclosures;

(B) estimate materials and building costs; and

(C) define appropriate construction methods that are friendly to the environment.

(4) The student demonstrates construction techniques related to design and fabrication of agricultural equipment. The student is expected to:

(A) operate oxy-fuel and plasma cutting equipment safely;

(B) proficiently demonstrate safe electrical welding; and

(C) use hand and power tools safely in the construction and repair of agricultural equipment.

(5) The student demonstrates knowledge of laws and regulations related to the construction, design and fabrication of agricultural equipment. The student is expected to:

(A) incorporate industry standards developed by entities such as American National Standards Institute (ANSI), American Society of Agricultural Engineers (ASAE), or Occupational Safety and Health Administration (OSHA) into the construction of agricultural equipment; and

(B) design and build equipment in compliance with state and federal laws enforced by agencies such as the U.S. Department of Transportation (DOT).

§127.44. Agricultural Power Systems (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Agriculture, Food, and Natural Resources. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Agricultural Power Systems is designed to develop an understanding of power and control systems as related to energy sources, small and large power systems, and agricultural machinery. To prepare for careers in agricultural power, structural, and technical systems, students must attain academic skills and knowledge; acquire technical knowledge and skills related to power, structural, and technical agricultural systems and the workplace; and develop knowledge and skills regarding career opportunities, entry requirements, industry certifications, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and technical skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a supervised agriculture experience program. The student is expected to:

(A) plan, propose, conduct, document, and evaluate a supervised agriculture experience program as an experiential learning activity;

(B) apply proper record-keeping skills as they relate to the supervised agriculture experience;

(C) participate in youth leadership opportunities to create a well-rounded experience program; and

(D) produce and participate in a local program of activities using a strategic planning process.

(2) The student connects power generation to differing energy sources. The student is expected to:

(A) examine benefits and detriments of petroleum and alternative energy sources;

(B) compare environmental impacts of varying energy sources;

(C) compare efficiency and characteristics of different energy sources; and

(D) investigate the efficiency of power generation systems that use various energy sources.

(3) The student selects the appropriate tool to perform a given task related to agricultural power systems. The student is expected to:

(A) select and identify standard tools, equipment, and safety procedures common to power and control applications;

(B) follow operating instructions of specialized tools and equipment such as micrometers, digital multimeters, and dynamometers;

(C) set up and adjust tools and equipment such as dynamometers, flow meters, torque wrenches, lathes, and mills;

(D) maintain and store tools and equipment common to power and control applications; and

(E) inventory tools and equipment in a service or maintenance facility.

(4) The student selects, operates, and maintains small engines. The student is expected to:

(A) describe principles of operation of internal combustion engines;

(B) disassemble and reassemble small engines;

(C) select, maintain, and troubleshoot small engines; and

(D) research small engine industry certifications.

(5) The student selects, operates, and maintains agricultural machines and equipment. The student is expected to:

(A) identify and select agricultural equipment for appropriate tasks such as the selection of tillage equipment to obtain a desired result;

(B) identify and maintain component materials such as bearings, hydraulic cylinders, seals, chains, and drives on varying types of machines and equipment;

(C) ensure the presence and function of safety devices such as guards and shields and hardware on machinery and equipment;

(D) calibrate metering, monitoring, and sensing equipment on various equipment such as tillage, harvest, transport, and haying equipment; and

(E) perform pre-operation inspection and appropriate start-up procedures, identify causes of equipment malfunctions and failures, perform scheduled preventive maintenance, and safely operate equipment.

(6) The student selects, operates, and maintains tractors and agricultural power systems. The student is expected to:

(A) select tractors based upon application and power requirements and describe or perform safe operation of tractors in various applications;

(B) maintain intake and exhaust system components, including shrouds, screens, filters, piping, after-coolers, air induction systems, manifolds, exhaust scrubbers, and mufflers;

(C) select lubricants and apply appropriate lubrication as required by maintenance schedules;

(D) identify and maintain various fuel systems, power trains, and hydraulic systems used on farm tractors;

(E) explain charging, starting, operating, and igniting direct current electrical systems;

(F) maintain steering and braking systems;

(G) maintain tires and tracks and describe the role of ballasting and traction in farm tractors; and

(H) explain the operation of and maintain liquid- and air-cooling systems in tractors.

(7) The student monitors and controls electrical systems as related to agricultural machines and equipment. The student is expected to:

(A) collect data and troubleshoot electrical systems using various meters and test equipment such as digital multimeters;

(B) employ appropriate techniques for applying devices, controls, and grounding in electrical systems;

(C) apply local and national codes and regulations relevant in electrical systems;

(D) select and apply electric controls such as motor controls, switches, circuit breakers, timers, sensors, and relays; and

(E) interpret data generated by electrical monitoring systems.

(8) The student implements control systems related to agricultural machines and equipment. The student is expected to:

(A) analyze schematic drawings for electrical control systems;

(B) describe uses of various electrical control system components;

(C) install control system components such as motor controls, switches, circuit breakers, timers, sensors, and relays and properly use appropriate tools, procedures, and safety practices; and

(D) identify system performance problems and apply troubleshooting techniques using monitoring or troubleshooting devices.

(9) The student describes hydraulic controls and applications as related to agricultural machines and equipment. The student is expected to:

(A) describe the operation of open and closed center hydraulic systems;

(B) explain the purpose and function of hydraulic controls such as valves, motors, pumps, cylinders, manifolds, and meters; and

(C) create basic hydraulic circuits using a variety of hydraulic controls.

(10) The student describes additional control systems as related to agricultural machines and equipment. The student is expected to:

(A) explain the application of pneumatic systems and controls; and

(B) explain the application of water or other fluid control systems to agricultural machines and equipment and their components.

§127.85. Agricultural Laboratory and Field Experience (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12 as a corequisite course for students participating in a coherent sequence of career and technical education courses in the Agriculture, Food, and Natural Resources or Energy career clusters. This course provides an enhancement opportunity for students to develop the additional skills necessary to pursue industry certification.

(1) Recommended prerequisite: a minimum of one credit from a course in the Agriculture, Food, and Natural Resources or Energy career clusters.

(2) Corequisite: this course must be taken concurrently with a corequisite course from the Agriculture, Food, and Natural Resources or Energy career clusters and may not be taken as a stand-alone course. The following courses are permitted as corequisites:

(A) Agribusiness Management and Marketing;

(B) Livestock and Poultry Production;

(C) Veterinary Science;

(D) Food Technology and Safety;

(E) Food Processing;

(F) Wildlife, Fisheries, and Ecology Management;

(G) Forestry and Woodland Ecosystems;

(H) Range Ecology and Management;

(I) Floral Design;

(J) Horticultural Science;

(K) Greenhouse Operation and Production;

(L) Agricultural Mechanics and Metal Technologies;

(M) Agricultural Structures Design and Fabrication;

(N) Agricultural Equipment Design and Fabrication;

(O) Agricultural Power Systems;

(P) Oil and Gas Production I;

(Q) Oil and Gas Production II;

(R) Energy and Natural Resource Technology; and

(S) Advanced Energy and Natural Resource Technology.

(3) Districts are encouraged to offer this lab in a consecutive block with the corequisite course to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Agriculture, Food, and Natural Resources Career Cluster focuses on the production, processing, marketing, distribution, financing, and development of agricultural commodities and resources, including food, fiber, wood products, natural resources, horticulture, and other plant and animal products/resources.

(3) Agricultural Laboratory and Field Experience is designed to provide students a laboratory and/or field experience opportunity. To prepare for careers in agriculture, food, and natural resources, students must acquire knowledge and skills that meet entry requirements and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer academic knowledge and technical skills in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) investigate career development and entrepreneurship opportunities in agriculture, food, and natural resources;

(B) apply competencies related to resources, information, and interpersonal skills;

(C) practice personal and occupational health and safety practices in the workplace;

(D) examine employer expectations and exhibit appropriate work habits;

(E) develop good characteristics of citizenship, including advocacy, stewardship, and community leadership; and

(F) pursue appropriate licensing, certification, and credentialing requirements.

(2) The student uses technology to research a project. The student is expected to:

(A) effectively use search engines, databases, and other digital electronic tools to locate information;

(B) evaluate quality, accuracy, completeness, reliability, and currency of information from any source;

(C) prepare, organize, present, and apply independent research; and

(D) accept constructive criticism and revise personal views when warranted by valid evidence.

(3) The student develops an elevated aptitude for the essential knowledge and skills listed for the corequisite course. The student is expected to:

(A) demonstrate deeper understanding of the corequisite course;

(B) develop mastery of hands-on skills at an industry-accepted standard; and

(C) exhibit progress toward achieving industry-recognized documentation of specific expertise in an agriculture, food, and natural resources field or skill.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER D. ARCHITECTURE AND CONSTRUCTION

19 TAC §§127.94 - 127.114, 127.145 - 127.154

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.94. Principles of Architecture (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Principles of Architecture provides an overview to the various fields of architecture, interior design, and construction management. Achieving proficiency in decision making and problem solving is an essential skill for career planning and lifelong learning. Students use self-knowledge, education, and career information to set and achieve realistic career and educational goals. Job-specific training can be provided through training modules that identify career goals in trade and industry areas. Classroom studies include topics such as safety, work ethics, communication, information technology applications, systems, health, environment, leadership, teamwork, ethical and legal responsibility, employability, and career development and include skills such as problem solving, critical thinking, and reading technical drawings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student performs mathematical operations to complete tasks such as measuring and estimating materials and supplies. The student is expected to:

(A) determine areas and volumes of various structures and estimate materials and supplies using appropriate geometric formulas and calculations;

(B) determine percentages and decimals and use percentages and decimals to perform measurement tasks using appropriate formulas and calculations;

(C) determine ratios, fractions, and proportions using appropriate formulas and calculations;

(D) perform measurement tasks using ratios, fractions, and proportions; and

(E) estimate materials and supplies using dimensions, spaces, and structures calculations.

(2) The student uses physics skills to work with materials and load applications. The student is expected to:

(A) apply basic concepts of static and loads to planning; and

(B) identify the physical properties present when using common construction materials in order to use the materials safely, effectively, and efficiently.

(3) The student manages chemical materials safely. The student is expected to:

(A) recognize the issues present when mixing compatible and incompatible substances to maintain workplace and jobsite safety;

(B) differentiate between incompatible and compatible substances;

(C) describe the chemical process that occurs when using common construction materials to maintain workplace and jobsite safety; and

(D) apply chemical processes in relation to environmental conditions.

(4) The student reads, comprehends, and communicates effectively in the workplace, using proper grammar and workplace terminology when using printed, written, and electronic media. The student is expected to:

(A) use technological applications to transmit reports;

(B) develop written communications such as estimates, work orders, and memos;

(C) read and follow technical instructions and manuals;

(D) compose an accurate and organized diary or log of work; and

(E) write reports and documents such as estimates, permits, memos, and technical reports.

(5) The student listens attentively and speaks clearly to convey information correctly. The student is expected to:

(A) confirm understanding of verbal and visual instructions; and

(B) ask relevant questions concerning details of instructions.

(6) The student listens to and speaks clearly with a variety of individuals to enhance communications skills. The student is expected to:

(A) provide verbal instructions; and

(B) listen attentively to spoken messages to respond to information.

(7) The student exhibits public relations skills to address a variety of situations such as increasing internal and external customer and client satisfaction. The student is expected to:

(A) communicate effectively to develop positive customer and client relationships;

(B) develop and maintain customer relations;

(C) define customer and client satisfaction; and

(D) evaluate customer and client satisfaction.

(8) The student identifies the relationship between available resources and requirements of a project to accomplish realistic planning. The student is expected to:

(A) initiate a project, including identifying resources and materials and time-management, labor-management, job-management, and job-site obligations in order to effectively plan;

(B) plan a project, including estimating correct amounts of required resources and materials and identifying risks;

(C) evaluate the feasibility of alternative suggestions;

(D) execute, monitor, and control a project using available resources and materials effectively; and

(E) close a project, including identifying lessons learned and evaluating waste of resources and materials.

(9) The student evaluates and adjusts plans and schedules to respond to unexpected events and conditions. The student is expected to:

(A) incorporate potential job disruptions into planning timelines;

(B) identify potential events and conditions that disrupt the completion of a job;

(C) solve situational problems involved with unexpected events and conditions;

(D) adjust plans and schedules to meet project needs;

(E) modify existing plans and schedules to reflect an unexpected change;

(F) identify and assess critical situations as they arise to resolve issues with the best solution; and

(G) present a project update to track changes necessitated by unexpected events and conditions.

(10) The student synthesizes and reports conditions to keep the organization appraised of progress and potential problems. The student is expected to:

(A) provide a project update for stakeholders; and

(B) present a verbal or written status report on a project.

(11) The student uses technological applications specific to architecture and construction to access, manage, integrate, and create information. The student is expected to:

(A) manage personal and professional schedules and contact information;

(B) manage daily, weekly, and monthly schedules using an application; and

(C) create memos and notes.

(12) The student uses electronic devices to communicate. The student is expected to:

(A) access an electronic system using login and password functions;

(B) access electronic messages received;

(C) create electronic messages in accordance with established business standards such as grammar, word usage, spelling, sentence structure, clarity, and etiquette;

(D) practice appropriate electronic message etiquette;

(E) send electronic messages;

(F) use electronic devices to share files and documents;

(G) access electronic devices for attachments;

(H) attach documents to electronic messages; and

(I) save electronic messages and attachments.

(13) The student uses writing and publishing applications. The student is expected to:

(A) prepare simple documents and other business communications;

(B) retrieve existing documents;

(C) create documents such as letters, memos, and reports using existing forms and templates;

(D) safeguard documents using name and save functions;

(E) format text using basic formatting functions; and

(F) employ word processing utility tools such as spell check, grammar check, and thesaurus.

(14) The student uses spreadsheet applications. The student is expected to:

(A) create, retrieve, edit, save, and print spreadsheets;

(B) perform calculations and analysis on data;

(C) group worksheets;

(D) create charts and graphs from a spreadsheet;

(E) perform calculations using simple formulas; and

(F) input and process data using spreadsheet functions.

(15) The student uses database applications. The student is expected to:

(A) manipulate data elements;

(B) enter data using a form;

(C) locate and replace data using search and replace functions; and

(D) process data using database functions such as structure, format, attributes, and relationships.

(16) The student uses collaborative applications. The student is expected to:

(A) facilitate group work through management of shared schedules and contact information;

(B) manage daily, weekly, and monthly schedules using an application; and

(C) maintain a shared database of contact information.

(17) The student complies with governmental regulations and applicable codes to establish a legal and safe environment. The student is expected to:

(A) identify occupation-specific governmental regulations and national, state, and local building codes to establish appropriate regulations and codes;

(B) comply with governmental regulations and building codes;

(C) read and discuss information on Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), and other safety regulations; and

(D) read and discuss Safety Data Sheet (SDS) information to manage and dispose of hazardous materials.

(18) The student examines all aspects of the built environment and systems to complete project planning. The student is expected to:

(A) align and incorporate the built environment and its systems to complete the project;

(B) label all systems on a set of construction documents;

(C) discuss the interrelationship of the systems in the built environment; and

(D) use a sequential method such as the critical path method so that work progresses efficiently.

(19) The student applies industry standards and practices to ensure quality work. The student is expected to:

(A) identify current industry standards and practices in order to incorporate quality into projects;

(B) document how quality improves profitability;

(C) report on issues that affect quality;

(D) use industry standards and practices to enhance appreciation for quality workmanship; and

(E) perform work that meets or exceeds the quality standards of the industry.

(20) The student observes rules and regulations to comply with personal and occupational health and safety standards. The student is expected to:

(A) follow appropriate safety standards to ensure a safe environment;

(B) practice safety rules and regulations;

(C) identify safety precautions and hazards to ensure a safe environment; and

(D) use appropriate safety practices and equipment, including personal protective equipment.

(21) The student works as an individual and as a team member to accomplish assignments. The student is expected to:

(A) use human relations skills to work cooperatively with coworkers representing different cultures, genders, and backgrounds;

(B) track team goals to contribute constructively and positively to the team;

(C) match team members to appropriate activities;

(D) manage skills to effectively accomplish assignments;

(E) effectively use conflict-resolution skills with coworkers to maintain a smooth workflow; and

(F) use mentoring skills to inspire and motivate others to achieve and enhance performance.

(22) The student exhibits personal accountability, integrity, and responsibility to enhance confidence among coworkers. The student is expected to:

(A) apply the professional and ethical standards of the industry to personal conduct;

(B) practice professional and ethical standards;

(C) maintain personal integrity;

(D) promote personal and professional integrity in coworkers; and

(E) recognize integrity in others.

(23) The student reads regulations and contracts to ensure ethical and safety elements are observed. The student is expected to:

(A) study regulations and codes to identify those applicable to the local area;

(B) locate and implement regulations and codes applicable to tasks and projects;

(C) comply with local, state, and federal agencies and model code-setting organizations;

(D) recognize the definition of specialized words or phrases to fully understand documents and contracts;

(E) use industry jargon or terminology appropriately;

(F) use industry acronyms correctly;

(G) use words with multiple meanings correctly in context; and

(H) use ethical and legal standards to avoid conflicts of interest.

(24) The student recognizes a positive work ethic to comply with employment requirements. The student is expected to:

(A) exhibit behaviors showing reliability and dependability;

(B) recognize appropriate dress for the work environment; and

(C) recognize the required employment forms and documentation such as I-9, work visa, W-4, and licensures to meet employment requirements.

(25) The student recognizes requirements for career advancement to plan for continuing education and training. The student is expected to:

(A) identify opportunities for career advancement to formulate career goals;

(B) identify a career ladder;

(C) develop a career advancement plan;

(D) review progress of a career advancement plan;

(E) maintain positive interpersonal skills to enhance advancement potential;

(F) explore education and training opportunities to acquire skills necessary for career advancement;

(G) list postsecondary educational paths associated with the architecture and construction trades, including college, apprenticeship, and specialty trade schools;

(H) explore costs associated with postsecondary education;

(I) participate in professional development opportunities such as professional organizations and associations, trade shows, and seminars;

(J) read professional journals, magazines, manufacturers' catalogs, industry publications, and Internet sites to keep current on industry trends; and

(K) identify declining and emerging occupations, practices, and procedures.

(26) The student examines the organization and structure of various segments of the industry to prepare for career advancement. The student is expected to:

(A) recognize segments of the construction industry and show the relationships to specialty areas;

(B) obtain necessary knowledge and skills to enhance employability;

(C) research local and regional labor markets and job growth information to project potential for advancement;

(D) identify sources of career information;

(E) identify job opportunities for the trade;

(F) identify organizations that offer career and job placement;

(G) analyze potential growth of identified careers;

(H) apply labor market and job growth information to career goals;

(I) examine licensing, certification, and credentialing requirements at the national, state, and local levels to achieve compliance;

(J) align licensing, certification, and credentialing requirements to career goals in order to plan for career advancement;

(K) use technologies and resources to research licensing, certification, and credentialing;

(L) evaluate and select suitable sources of licensing, certification, and credentialing;

(M) identify licenses, certifications, and credentials applicable to career goals; and

(N) document sources and agencies for licensing and certification and credentialing information, including contact information.

(27) The student initiates and maintains a career portfolio to document knowledge, skills, and abilities. The student is expected to:

(A) select education, work history, and skills to create a personal resume;

(B) develop a resume using word processing technology;

(C) contact professional references to acquire recommendations;

(D) obtain appropriate letters of recommendation; and

(E) document and maintain a record of work experiences, licenses, certifications, credentials, and education and training to build a portfolio.

(28) The student reads technical drawings and documents to plan a project. The student is expected to:

(A) interpret blueprints and drawings to assist with project planning;

(B) recognize elements and symbols of blueprints and drawings;

(C) relate information on blueprints to actual locations on the print;

(D) recognize different classifications of drawings; and

(E) interpret and use drawing dimensions.

(29) The student uses and maintains appropriate tools, machines, and equipment to accomplish project goals. The student is expected to:

(A) select tools, machinery, and equipment to match requirements of the project;

(B) safely operate tools, machinery, and equipment;

(C) maintain and care for tools, machines, and equipment;

(D) use tools, machines, and equipment productively and efficiently in alignment with industry standards;

(E) identify sources of information concerning state-of-the-art tools, equipment, materials, technologies, and methodologies;

(F) read current periodicals, industry publications, and manufacturers' catalogs; and

(G) explore state-of-the-art tools, equipment, materials, technologies, and methodologies.

§127.95. Principles of Construction (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Principles of Construction is intended to provide an introduction and lay a solid foundation for those students entering the construction or craft skilled areas. The course provides a strong knowledge of construction safety, construction mathematics, and common hand and power tools. For safety and liability considerations, limiting course enrollment to 15 students is recommended. This course also provides communication and occupation skills to assist the student in obtaining and maintaining employment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands that safe working standards are imperative in the classroom and in the field. The student is expected to:

(A) explain the idea of a safety culture;

(B) explain the importance of a safety culture in the construction crafts;

(C) explain the role of the OSHA in job-site safety;

(D) explain fall protection, ladder safety, stair safety, and scaffold safety procedures;

(E) demonstrate the use and care of appropriate personal protective equipment, including safety goggles and glasses, hard hats, gloves, safety harnesses, and safety shoes;

(F) define safe work procedures around electrical hazards; and

(G) explain the importance of Safety Data Sheets (SDS).

(2) The student understands the importance of recognizing potential hazards and preventing accidents in the classroom and in the field. The student is expected to:

(A) identify causes of accidents;

(B) identify impacts of accident costs;

(C) define hazard recognition;

(D) identify struck-by hazards;

(E) identify caught-in-between hazards;

(F) identify other construction hazards on the jobsite, including hazardous material exposures, environmental elements, welding and cutting hazards, confined spaces, and fires; and

(G) explain the importance of hazard communication (HazCom).

(3) The student understands basic construction mathematics. The student is expected to:

(A) add, subtract, multiply, and divide whole numbers with and without a calculator;

(B) add, subtract, multiply, and divide fractions;

(C) add, subtract, multiply, and divide decimals with and without a calculator;

(D) convert decimals to percentages and percentages to decimals; and

(E) convert fractions to decimals and decimals to fractions.

(4) The student demonstrates basic measuring practices. The student is expected to:

(A) use a standard ruler, a metric ruler, a measuring tape, and an architectural/engineering scale to measure;

(B) explain what the metric system is and how it is important in the construction trade;

(C) recognize and use metric units of length, weight, volume, and temperature; and

(D) recognize some of the basic shapes used in the construction industry and apply basic geometric principles to measure them.

(5) The student acquires knowledge about care and identification of hand tools. The student is expected to:

(A) recognize and identify the basic hand tools and their purposes for the construction trades;

(B) inspect basic hand tools visually to determine if they are safe for use; and

(C) use the basic construction hand tools safely and properly.

(6) The student acquires knowledge about care and identification of powered hand tools. The student is expected to:

(A) identify powered hand tools commonly used in the construction trades;

(B) practice safe and proper application of powered hand tools commonly used in the construction trades; and

(C) explain how to properly maintain and clean powered hand tools commonly used in construction trades.

(7) The student develops the basics of construction drawing. The student is expected to:

(A) interpret and use drawing dimensions;

(B) recognize and identify basic construction terms;

(C) recognize and identify basic drawing components;

(D) recognize and identify commonly used drawing symbols;

(E) relate information on construction drawings to actual locations on the print; and

(F) recognize different classifications of construction drawings.

(8) The student interprets and presents information used in workplace situations. The student is expected to:

(A) interpret information and instructions presented in written form;

(B) interpret information and instructions presented in verbal form;

(C) communicate effectively using verbal and writing skills; and

(D) communicate effectively on the job using electronic communication devices.

(9) The student identifies ergonomic tools and procedures as well as safe material handling standards. The student is expected to:

(A) define a load;

(B) establish a pre-task plan prior to moving a load;

(C) apply proper material-handling techniques;

(D) choose appropriate material-handling equipment for the task; and

(E) recognize hazards and follow safety procedures required for material handling.

§127.96. Building Maintenance Technology I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture or Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Building Maintenance Technology I, students will gain knowledge and skills needed to enter the field of building maintenance as a building maintenance technician or supervisor or secure a foundation for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in plumbing; electrical; and heating, ventilation, and air conditioning (HVAC) systems. Additionally, students will learn methods for repair and installation of drywall, roof, and insulation systems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates knowledge of basic worksite safety regulations and safety guidelines such as in electrical work and carpentry. The student is expected to:

(A) demonstrate safe working procedures during building maintenance and repair;

(B) explain the purpose of the Occupational Safety and Health Administration (OSHA) and how to promote safety on a worksite;

(C) identify worksite hazards and how to avoid or minimize them on a worksite;

(D) explain safety obligations of workers, supervisors, and managers to ensure a safe worksite;

(E) discuss the causes, effects, impacts, and costs of accidents;

(F) define safe work procedures for working with hazardous chemicals;

(G) define proper use of personal protective equipment; and

(H) identify potential construction hazards, including hazardous material exposures, welding, cutting hazards, and confined spaces.

(2) The student interprets various types of working drawings as they pertain to commercial construction and becomes familiar with all aspects of commercial construction documents, including architectural, engineering, and shop drawings. The student is expected to:

(A) describe the types of drawings usually included in a set of plans and list the information found on each type;

(B) identify the different types of lines used on blueprint drawings;

(C) identify selected electrical, mechanical, and plumbing symbols commonly used on plans;

(D) identify selected architectural symbols commonly used to present materials on plans;

(E) identify selected abbreviations commonly used on plans;

(F) read and interpret plans, elevations, schedules, sections, and details contained in basic construction drawings;

(G) describe the purpose of written specifications;

(H) identify and describe the parts of a specification; and

(I) demonstrate how to perform a quantity takeoff for materials.

(3) The student demonstrates how to use hand tools that are commonly used in the worksite such as hammers, saws, levels, pullers, and clamps. The student is expected to:

(A) explain and demonstrate the specific applications and uses of hand tools; and

(B) identify the important safety and maintenance requirements for hand tools.

(4) The student demonstrates how to use power tools that are commonly used in the worksite such as drills, grinders, saws, and sanders. The student is expect to:

(A) explain and demonstrate appropriately the specific applications and uses of power tools; and

(B) identify the important safety and maintenance requirements for power tools.

(5) The student demonstrates how to use the latest technologies such as computer numeric control (CNC) machinery and plasma machinery. The student is expected to:

(A) identify the important safety issues of the latest technologies; and

(B) identify the important maintenance issues of the latest technologies.

(6) The student selects and installs various types of insulation in walls, floors, and attics and becomes familiar with the uses and installation practices for vapor barriers and waterproofing materials. The student is expected to:

(A) demonstrate how to properly remove, replace, and install various types of insulation, including batt, rigid, and blown materials; and

(B) demonstrate how to use and install various vapor barriers and waterproofing materials.

(7) The student installs various exterior siding materials, including wood, metal, vinyl, and cement board siding. The student is expected to:

(A) demonstrate the proper methods to install exterior finish materials, including wood, metal, vinyl, and cement board siding;

(B) identify various fasteners used to install siding, including nails, screws, and adhesives;

(C) describe the types and applications of stucco and masonry veneer finishes; and

(D) install three types of siding commonly used in the local area.

(8) The student gains knowledge of the types and grades of framing materials and the process for installation of metal framing for interior walls, exterior nonbearing walls, and partitions. The student is expected to:

(A) identify and use a system to install a frame wall or partition;

(B) identify the fastening methods used for frame systems; and

(C) identify methods used to secure steel frame systems to supporting structures.

(9) The student knows various types of gypsum drywall and their uses and the fastening devices and methods used to install them. The student is expected to:

(A) identify the different types of drywall and their uses;

(B) select the type and thickness of drywall required for specific installations;

(C) explain the fastener schedules for different types of drywall installations;

(D) perform single-layer and multi-layer drywall installations using different types of fastening systems, including nails, drywall screws, and adhesives;

(E) install gypsum drywall on steel studs; and

(F) estimate material quantities for a drywall installation.

(10) The student knows the materials, tools, and methods used to finish and patch gypsum drywall. The student is expected to:

(A) describe the differences among the six levels of finish established by industry standards and distinguish a finish level by observation;

(B) identify the hand tools used in drywall finishing and demonstrate the ability to use these tools;

(C) identify the automatic tools used in drywall finishing;

(D) identify the materials used in drywall finishing and describe the purpose and use of each type of material, including compounds, joint reinforcing tapes, trim materials, and textures and coatings;

(E) finish drywall using hand tools;

(F) recognize various types of problems that occur in drywall finishes;

(G) identify the causes and correct method for solving each type of problem that occurs in drywall finishes; and

(H) patch damaged drywall.

(11) The student installs metal doors and related hardware in steel-framed, wood-framed, and masonry walls. The student is expected to:

(A) identify various types of door jambs and frames and demonstrate the installation procedures for placing selected door jambs and frames in different types of interior partitions;

(B) identify types of interior doors;

(C) identify different types of interior door hardware and demonstrate the installation procedures for selected types;

(D) list and identify specific items included on a typical door schedule; and

(E) demonstrate the procedures for placing and hanging a selected door.

(12) The student gains knowledge of the materials, layouts, and installations of various types of suspended ceilings used in commercial construction as well as ceiling tiles, drywall suspension systems, and pan-type ceilings. The student is expected to:

(A) establish a level line;

(B) explain the common terms related to sound waves and acoustical ceiling materials;

(C) identify the different types of suspended ceilings;

(D) interpret plans related to ceiling layout for a suspended ceiling;

(E) sketch the ceiling layout for a suspended ceiling; and

(F) install selected suspended ceilings.

(13) The student knows the various types of trim used in finish work and the proper methods for selecting, cutting, and fastening trim. The student is expected to:

(A) identify the different types of standard moldings and describe their uses;

(B) make square and miter cuts using a miter box or power miter saw;

(C) make coped joint cuts using a coping saw; and

(D) select and use fasteners to install trim, including door trim, window trim, base trim, and ceiling trim.

(14) The student selects and installs base and wall cabinets and countertops. The student is expected to:

(A) describe the classes and sizes of typical base and wall cabinets;

(B) identify cabinet components and hardware and describe their purposes;

(C) lay out factory-made cabinets, countertops, and backsplashes; and

(D) install plastic laminate on a countertop core.

(15) The student selects and installs various types of floor coverings, including carpet, vinyl tile, ceramic tile, and wood flooring systems. The student is expected to:

(A) describe the methods used to install ceramic tile, carpet, and vinyl tile;

(B) make repairs to ceramic tile, carpet, and vinyl tile; and

(C) use and maintain the tools used for the installation and repair of floor systems, including wet saw, trowels, and carpet knives.

§127.97. Building Maintenance Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Building Maintenance Technology I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Building Maintenance Technology II, students will continue to gain advanced knowledge and skills needed to enter the workforce as a building maintenance technician or supervisor and construction project manager or secure a foundation for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in safety, Occupational Safety and Health Administration (OSHA) standards, and safety devices in electrical circuits; maintenance of electrical and heating, ventilation, and air conditioning (HVAC) systems; and concepts of historic preservation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates knowledge of basic worksite safety regulations and safety guidelines. The student is expected to:

(A) demonstrate safe working procedures during building maintenance and repair;

(B) explain the purpose of the OSHA and how to promote on-site safety;

(C) identify electrical hazards and how to avoid or minimize them;

(D) explain obligations of workers, supervisors, and managers to ensure a safe work environment;

(E) discuss the causes, effects, and costs of accidents; and

(F) define safe work procedures regarding personal protective equipment, hazardous chemicals, and potential construction hazards, including hazardous material exposures, welding, cutting hazards, and confined spaces.

(2) The student knows how to interpret blueprint drawings, various symbols, schematics, one-line diagrams, and wiring diagrams. The student is expected to:

(A) explain the basic layout of a blueprint drawing;

(B) identify the common symbols used on commercial construction drawings; and

(C) read equipment schedules found on blueprint drawings.

(3) The student knows how to handle fuses and circuit breakers. The student is expected to:

(A) explain the necessity of overcurrent protection devices in electrical circuits;

(B) define the terms associated with fuses and circuit breakers;

(C) describe the operation of a circuit breaker;

(D) describe the operation of single-element and time-delay fuses;

(E) explain how ground fault circuit interrupters can save lives; and

(F) describe troubleshooting and maintenance techniques for overcurrent devices.

(4) The student installs various types of lamps and fixtures. The student is expected to:

(A) recognize the different types of lamps and explain the advantages and disadvantages of different types such as incandescent, halogen, fluorescent, and high-intensity discharge;

(B) select and install lamps into lighting fixtures; and

(C) install various lighting fixtures such as surface mounted, recessed, suspended, and track-mounted.

(5) The student knows various methods to properly select, inspect, use, and maintain common electrical test equipment. The student is expected to:

(A) explain the operation of and describe various test equipment such as ammeter, voltmeter, volt-ohm-multimeter, and continuity tester;

(B) explain how to read test equipment and convert from one scale to another;

(C) explain the importance of proper meter polarity;

(D) define frequency and explain the use of a frequency meter; and

(E) explain the differences between digital and analog meters.

(6) The student installs and maintains electrical devices and demonstrates wiring techniques common to residential and industrial facilities. The student is expected to:

(A) describe how to determine electrical service requirements for residential and industrial facilities;

(B) select the proper wiring methods for various residential and industrial facilities;

(C) explain the role of the National Electrical Code;

(D) compute branch circuit loads and explain their installation requirements;

(E) explain the types of equipment grounding conductors such as ground fault circuit interrupter (GFCI), light fixtures, receptors, and switches and their purposes;

(F) distinguish between the sizes of outlet boxes and their various wiring methods;

(G) describe the rules for installing electric space heating and HVAC systems equipment; and

(H) describe the installation rules for electrical systems around swimming pools, spas, and hot tubs.

(7) The student is introduced to the basic principles of HVAC systems. The student is expected to:

(A) explain the principles of HVAC systems;

(B) describe what the Clean Air Act means to the HVAC systems industry; and

(C) identify the types of schedules and drawings used in the HVAC systems and refrigeration industries.

(8) The student installs, selects, prepares, joins, and supports copper and plastic pipes and fittings. The student is expected to:

(A) describe the precautions that must be taken when installing refrigerant piping;

(B) select the right tubing for a project;

(C) cut and bend copper tubing;

(D) determine the kinds of hangers and supports needed for refrigeration piping;

(E) describe the requirements for pressure-testing an installed system;

(F) identify types of plastic pipe and describe their uses; and

(G) cut and join lengths of plastic pipe.

(9) The student operates, tests, and adjusts conventional and electronic thermostats as well as the common electrical, electronic, and pneumatic circuits used to control HVAC systems. The student is expected to:

(A) describe how conventional and electronic thermostats operate;

(B) describe how pneumatic and electronic circuits are used to control mechanical systems;

(C) analyze circuit diagrams for electronic and microprocessor-based controls; and

(D) troubleshoot systems using various controls.

(10) The student knows the concepts of historic preservation and local and national resources to maintain and renovate historic structures and landscapes. The student is expected to:

(A) research the U.S. Department of Interior's methods and guides for historic preservation;

(B) describe the rules and regulations for historic preservation as prescribed by the Texas Historical Commission; and

(C) describe the historic preservation building codes for a local area.

§127.98. Construction Management I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Algebra I, Geometry, and Principles of Architecture or Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Construction Management I, students will gain knowledge and skills needed to enter the workforce as apprentice carpenters or building maintenance supervisors' assistants or to build a foundation toward a postsecondary degree in architecture, construction science, drafting, or engineering. Construction Management I includes the knowledge of design techniques and tools related to the management of architectural and engineering projects.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the requirements of construction management. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(B) complete work orders and related paperwork;

(C) estimate jobs, schedules, and industry standards related to legal restrictions;

(D) read and interpret appropriate architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins; and

(E) apply descriptive geometry related to auxiliary views, revolutions, intersections, and piping drawings.

(2) The student gains knowledge about building materials used in the construction industry, including lumber, sheet materials, engineered wood products, structural concrete, structural steel, fasteners, and adhesives used in construction settings. The student is expected to:

(A) identify various types of construction materials and methods;

(B) describe the uses of various types of hardwoods and softwoods;

(C) identify the grades and markings of wood building materials;

(D) describe the proper method of storing and handling building materials;

(E) describe the uses of various types of engineered lumber;

(F) calculate quantities of lumber and wood products using industry-standard methods; and

(G) describe the fasteners, anchors, and adhesives used in construction work.

(3) The student describes how a systems model can be used to describe construction activities, including mechanical, fluid, electrical, and thermal systems. The student is expected to:

(A) apply the universal systems model to construction activities;

(B) identify the inputs, processes, outputs, and feedback associated with construction systems;

(C) describe the subsystems used in construction; and

(D) describe how technological systems interact to achieve common goals.

(4) The student selects and uses the proper construction technology to meet practical objectives. The student is expected to:

(A) distinguish between architectural and civil construction systems;

(B) apply construction technology to individual or community problems;

(C) describe the factors that affect the purchase and use of constructed items; and

(D) identify and describe the roles of construction.

(5) The student designs an item for construction using appropriate design processes and techniques. The student is expected to:

(A) describe the design processes and techniques used in construction;

(B) develop or improve a building or structure that meets specified needs; and

(C) identify areas where quality, reliability, and safety can be designed into a building or structure.

(6) The student investigates emerging and innovative construction technologies. The student is expected to:

(A) report on emerging and innovative construction technologies; and

(B) conduct research and experimentation in construction technology.

(7) The student describes quality and how it is measured in construction. The student is expected to:

(A) describe different quality control applications in construction; and

(B) apply continuous quality improvement techniques to the construction of a building or structure.

(8) The student builds buildings or structures using the appropriate tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) describe the chemical, mechanical, and physical properties of construction materials;

(B) describe the processes used in construction; and

(C) construct buildings or structures using a variety of tools, equipment, and machines.

(9) The student works safely with construction tools, equipment, machines, and materials. The student is expected to:

(A) master relevant safety tests;

(B) follow safety manuals, instructions, and requirements;

(C) identify and classify hazardous materials and wastes; and

(D) dispose of hazardous materials and wastes appropriately.

(10) The student describes the importance of maintenance in construction. The student is expected to:

(A) maintain tools and materials correctly;

(B) perform manufacturers' maintenance procedures on selected tools, equipment, and machines; and

(C) describe the results of negligent or improper maintenance.

(11) The student manages a construction project. The student is expected to:

(A) develop a plan for completing a construction project; and

(B) participate in the organization and operation of a real or simulated construction project using project management processes, including initiating, planning, executing, monitoring and controlling, and closing a project.

(12) The student applies the appropriate codes, laws, standards, or regulations related to construction technology. The student is expected to:

(A) explain the importance of codes, laws, standards, or regulations related to construction technology;

(B) identify areas where codes, laws, standards, or regulations related to construction technology may be required; and

(C) comply with appropriate codes, laws, standards, or regulations.

(13) The student describes the intended and unintended effects of technological solutions. The student is expected to:

(A) apply an assessment strategy to determine the risks and benefits of technological developments in construction;

(B) describe how technology has affected individuals, societies, cultures, economies, and environments;

(C) discuss the international effects of construction technology; and

(D) describe the issues related to regional and community planning.

(14) The student identifies the factors that influence the evolution of construction technology. The student is expected to:

(A) describe how changes in construction technology affect business and industry; and

(B) describe how the evolution of construction technology has been influenced by past events.

(15) The student solves problems, thinks critically, and makes decisions related to construction technology. The student is expected to:

(A) develop or improve a building or structure by following a problem-solving strategy; and

(B) apply critical-thinking strategies to analyze and evaluate proposed technological solutions.

(16) The student identifies the factors that influence the cost of goods and services in construction projects. The student is expected to:

(A) develop a budget for a construction project; and

(B) determine the most effective strategies to minimize costs.

(17) The student knows the concepts and skills that form the technical knowledge of building carpentry. The student is expected to:

(A) identify the uses of carpentry hardware and fasteners; and

(B) demonstrate knowledge of fire ratings of construction materials.

(18) The student knows the function and application of the tools, equipment, technologies, and materials used in construction carpentry. The student is expected to:

(A) use hand tools, power tools, and equipment commonly employed in carpentry in a safe manner;

(B) handle and dispose of environmentally hazardous materials used in carpentry in the proper manner;

(C) use the different types of scaffolding employed in building carpentry in a safe manner; and

(D) demonstrate knowledge of new and emerging technologies that may affect construction carpentry.

(19) The student applies the concepts and skills of the construction industry to simulated or actual work situations. The student is expected to:

(A) square, measure, and cut materials to specified dimensions;

(B) handle different types of loads;

(C) use framing techniques for walls, floors, ceilings, rafters, structural timbers, stairs, trusses, and fireproof metal-studs;

(D) demonstrate the proper principles of drywall application; and

(E) install doors, windows, interior and exterior wall covering, and trim.

(20) The student knows the proper and safe use of hand and power tools. The student is expected to:

(A) identify the hand tools commonly used by carpenters and describe their uses;

(B) use hand tools safely;

(C) state the general safety rules for operating all power tools, regardless of type;

(D) identify the portable power tools commonly used by carpenters and describe their uses; and

(E) use portable power tools safely.

(21) The student learns how to interpret architectural and engineering working drawings and specifications. The student will become familiar with the symbols and nomenclature specific to the construction industry. The student is expected to:

(A) describe the types of drawings usually included in a set of plans;

(B) identify the different types of lines used on construction drawings;

(C) identify selected architectural symbols commonly used to represent materials on plans;

(D) identify selected electrical, mechanical, and plumbing symbols commonly used on plans;

(E) identify selected abbreviations commonly used on plans;

(F) read and interpret plans, elevations, schedules, sections, and details contained in basic construction drawings;

(G) state the purpose of written specifications; and

(H) demonstrate or describe how to perform a quantity takeoff for materials.

(22) The student gains knowledge about the basics of wood framing, including layout and construction of wood-framed floor systems using common and engineered lumber. The student is expected to:

(A) identify the different types of framing systems;

(B) interpret drawings with specifications to determine floor system requirements;

(C) identify framing and support members as it refers to flooring;

(D) name the methods used to fasten sills to the foundation;

(E) given specific floor load and span data, select the proper girder and beam size from a list of available girders and beams;

(F) list and recognize different types of bridging;

(G) list and recognize different types of flooring materials;

(H) explain the purposes of subflooring and underlayment;

(I) select the appropriate fasteners to be used in various floor-framing systems;

(J) estimate the amount of material needed to frame a floor assembly; and

(K) demonstrate the ability to lay out and construct a floor assembly, including installing bridging; installing joists for a cantilever-floor; installing a subfloor using butt-joint plywood or oriented strand board panels; and installing a single floor system using tongue-and-groove plywood or oriented strand board panels.

(23) The student understands how to lay out and frame walls and ceilings, rough-in door and window openings, construct corners and partition tee-bracing walls and ceilings, and apply sheathing. The student is expected to:

(A) identify the components of a wall and ceiling layout;

(B) describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing, and fire stops;

(C) describe the correct procedure for assembling and erecting an exterior wall;

(D) identify the common materials and methods for installing sheathing on walls;

(E) describe or demonstrate how to lay out, assemble, erect, and brace exterior walls for a frame building;

(F) describe wall-framing techniques used in masonry construction;

(G) explain the use of metal studs in wall framing;

(H) explain how to cut and install ceiling joists on a wood frame building; and

(I) estimate the materials required for frame walls and ceilings.

(24) The student investigates various types of framed roofs. The student is expected to:

(A) demonstrate an understanding of the terms associated with roof framing;

(B) identify the roof-framing members used in gable and hip roofs;

(C) identify the methods used to calculate the length of a rafter;

(D) identify the various types of trusses used in roof framing;

(E) use a framing square, speed square, and calculator in laying out a roof;

(F) identify various types of sheathing used in roof construction;

(G) frame or describe how to frame a gable roof with vent openings;

(H) erect, or describe how to erect, a gable roof using trusses;

(I) frame, or describe how to frame, a roof opening; and

(J) estimate the materials used for framing and sheathing a roof.

(25) The student describes various types of windows, skylights, and exterior doors. The student is expected to:

(A) identify various types of fixed, sliding, and swinging windows;

(B) identify the parts of a window installation;

(C) state the requirements for proper window installation;

(D) explain how to install a pre-hung window;

(E) identify the common types of exterior doors and explain how they are constructed;

(F) identify the parts of a door installation;

(G) identify types of thresholds used with exterior doors;

(H) install, or explain the procedure to install, a pre-hung exterior door;

(I) identify the various types of locksets used on exterior doors and explain how the locksets are installed;

(J) install a lockset; and

(K) identify and explain the use and installation of various other door and window hardware, including security hinges, keepers, deadbolts, and peep holes.

(26) The student describes various types of stairs and the common building code requirements related to stairs. The student is expected to:

(A) identify the various types of stairs;

(B) identify the various parts of stairs;

(C) identify the materials used in the construction of stairs;

(D) interpret construction drawings of stairs; and

(E) calculate the total rise, number and size of risers, and the number and size of treads required for a given stairway.

(27) The student describes basic product marketing processes and techniques used in construction. The student is expected to prepare a marketing plan for an idea, product, or service.

(28) The student investigates career opportunities, requirements, and expectations in construction technology. The student is expected to:

(A) describe an area of interest in construction and investigate its entry-level requirements and advancement opportunity requirements and its growth potential; and

(B) identify the careers available in construction technology.

(29) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) describe how teams function;

(B) describe the use of teamwork to solve problems;

(C) distinguish between the roles of team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and inequality; and

(G) describe the use of time-management techniques to develop and maintain work schedules and meet deadlines.

§127.99. Construction Management II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Construction Management I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Construction Management II, students will gain knowledge and skills needed to enter the workforce as apprentice carpenters or building maintenance supervisors' assistants or to build a foundation toward a postsecondary degree in architecture, construction science, drafting, or engineering. Construction Management II includes knowledge of the design, techniques, and tools related to the management of architectural and engineering projects.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student designs or modifies a structure using designated design processes and techniques. The student is expected to:

(A) develop or improve a building design that meets a specified need; and

(B) develop and communicate ideas using specified design processes.

(2) The student investigates emerging construction technologies. The student is expected to:

(A) report on emerging construction technologies; and

(B) conduct research in construction technology to determine its effectiveness.

(3) The student describes quality and how it is measured in construction. The student is expected to:

(A) construct items that meet a specified level of quality;

(B) recommend how the quality of a building can be improved;

(C) explain the factors that affect the quality of buildings; and

(D) describe the factors that affect the purchase and use of buildings.

(4) The student constructs buildings or scaled models using the appropriate tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) describe the chemical, mechanical, and physical properties and standard units of measure of architectural construction materials such as concrete, masonry, and metals;

(B) describe the processes used in construction; and

(C) construct a building or a model of a building using a variety of tools, equipment, and machines.

(5) The student works safely with construction technology. The student is expected to:

(A) master relevant safety tests;

(B) follow safety manuals, instructions, and requirements;

(C) identify and classify hazardous materials and wastes correctly;

(D) dispose of hazardous materials and waste appropriately; and

(E) recommend improvements in safety procedures.

(6) The student performs basic maintenance on selected construction equipment and machines. The student is expected to:

(A) maintain tools and materials correctly;

(B) perform manufacturers' maintenance procedures on selected tools, equipment, and machines; and

(C) develop a maintenance plan for selected machines and equipment.

(7) The student manages construction technology projects. The student is expected to:

(A) initiate a construction technology project;

(B) plan a construction technology project, including developing a project schedule and describing use of resources needed;

(C) execute a construction technology project;

(D) monitor and control a construction technology project; and

(E) close a construction technology project.

(8) The student follows the appropriate codes, laws, standards, or regulations related to architectural construction technology. The student is expected to:

(A) identify areas where codes, laws, standards, or regulations may be required;

(B) locate the appropriate codes, laws, standards, or regulations; and

(C) comply with the appropriate codes, laws, standards, or regulations.

(9) The student solves problems, thinks critically, and makes decisions related to architectural construction. The student is expected to:

(A) develop or improve a building or structure by following a problem-solving strategy;

(B) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and

(C) apply decision-making techniques to the selection of technological solutions.

(10) The student determines the cost of constructing a building. The student is expected to:

(A) develop a budget for a construction project; and

(B) determine the most effective strategies to minimize costs.

(11) The student applies communication, mathematical, and scientific knowledge and skills to construction activities. The student is expected to:

(A) write technical reports;

(B) make technical presentations to groups of individuals;

(C) use mathematical concepts in construction technology; and

(D) apply scientific principles used in construction technology.

(12) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish between the roles of team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' expectations for appropriate work habits;

(F) define discrimination, harassment, and inequality;

(G) use time-management techniques to develop work schedules, maintain work schedules, and meet work schedule deadlines; and

(H) complete work according to established criteria.

(13) The student gains knowledge about the ingredients of concrete, various types of concrete, and methods to mix concrete. The student is expected to:

(A) identify the properties of cement;

(B) describe the composition of concrete;

(C) perform volume estimates for concrete quantity requirements;

(D) describe types of concrete reinforcement materials;

(E) describe various types of footings and explain their uses;

(F) identify the parts of various types of forms;

(G) explain the safety procedures associated with the construction of concrete forms; and

(H) explain how to erect, plumb, and brace a simple concrete form with reinforcement.

(14) The student uses a systems approach to investigate mechanical, fluid, electrical, and thermal systems. The student is expected to:

(A) apply the universal systems model to technological activities; and

(B) identify the inputs, processes, outputs, and feedback associated with each of the systems.

(15) The student works safely with mechanical, fluid, electrical, and thermal technology. The student is expected to:

(A) master relevant safety tests;

(B) follow safety manuals, instructions, and requirements;

(C) identify and classify hazardous materials and wastes; and

(D) dispose of hazardous materials and wastes appropriately.

(16) The student solves problems, thinks critically, and makes decisions related to construction. The student is expected to:

(A) apply problem-solving strategies;

(B) apply critical-thinking strategies;

(C) apply decision-making techniques to the selection of technological solutions; and

(D) evaluate the impact of technology on scientific thought, society, and the environment.

(17) The student applies communication, science, and mathematics knowledge and skills to construction activities. The student is expected to:

(A) prepare technical reports and presentations;

(B) solve algebraic equations;

(C) solve problems in U.S. standard and metric units; and

(D) perform unit conversions.

(18) The student knows the laws governing motion. The student is expected to:

(A) analyze examples of uniform and accelerated motion, including linear, projectile, and circular motion;

(B) evaluate the effects of forces on the motion of objects;

(C) develop a free-body diagram for force analysis; and

(D) analyze motion relative to different frames of reference.

(19) The student knows the concept of momentum. The student is expected to:

(A) identify linear and angular momentum; and

(B) relate the conservation of momentum to linear and angular motion.

(20) The student knows the concept of waves and vibrations. The student is expected to:

(A) evaluate characteristics of wave motion; and

(B) demonstrate how waves transmit energy.

(21) The student knows the concept of energy conversion. The student is expected to:

(A) evaluate the purpose of energy converters;

(B) identify converters that change one form of energy to another; and

(C) evaluate the efficiency of converting energy from one form to another.

(22) The student knows the concept of energy transduction. The student is expected to:

(A) identify the function of a transducer;

(B) distinguish between an energy converter and a transducer; and

(C) identify transducers that change energy signals from one form to another.

(23) The student knows the concept of radiant energy. The student is expected to:

(A) describe radiation;

(B) compare fission and fusion in terms of end products, energy, advantages, and availability; and

(C) compare and contrast different types of radioactive decay.

(24) The student knows the concept of light and optics. The student is expected to:

(A) identify characteristics of optical devices;

(B) analyze the characteristics of light, including reflection, refraction, and interference; and

(C) interpret the effects of wave characteristics in daily applications such as lasers and optics in industrial and medical technology.

(25) The student knows the concept of time constants. The student is expected to:

(A) define a time constant; and

(B) distinguish between a linear and non-linear increase and decrease of a variable with time.

(26) The student describes basic product marketing processes and techniques used in construction. The student is expected to:

(A) prepare a marketing plan for an idea, product, or service; and

(B) discuss the effect of customer satisfaction on the image of a product or company.

(27) The student investigates career opportunities, requirements, and expectations in construction technology. The student is expected to:

(A) identify an area of interest in construction and investigate its entry-level and advancement requirements and its growth potential; and

(B) describe the careers available in construction.

(28) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish between the roles of team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and inequality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

§127.100. Construction Technology I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Construction or Principles of Architecture. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Construction Technology I, students will gain knowledge and skills needed to enter the workforce as carpenters or building maintenance supervisors or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in safety, tool usage, building materials, codes, and framing. For safety and liability considerations, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands that safe working standards are imperative in the classroom and in the field. The student is expected to:

(A) explain the idea of a safety culture;

(B) explain the importance of a safety culture in the construction crafts;

(C) explain the role of Occupational Safety and Health Administration (OSHA) in job-site safety;

(D) explain fall protection, ladder safety, stair safety, and scaffold safety procedures;

(E) explain the importance of hazard communication (HazCom);

(F) explain the importance of Safety Data Sheets (SDS);

(G) explain OSHA's General Duty Clause;

(H) explain OSHA 1926 CFR Subpart C;

(I) identify causes of accidents;

(J) identify impacts of accident costs;

(K) identify struck-by hazards;

(L) identify caught-in-between hazards;

(M) identify other construction hazards on the jobsite, including hazardous material exposures, environmental elements, welding and cutting hazards, confined spaces, and fires;

(N) define safe work procedures around electrical hazards;

(O) define hazard recognition;

(P) define risk assessment techniques; and

(Q) demonstrate the use and care of appropriate personal protective equipment, including safety goggles and glasses, hard hats, gloves, safety harnesses, and safety shoes.

(2) The student identifies various opportunities in the field of carpentry and the characteristics a carpenter should possess. The student is expected to:

(A) identify job opportunities and their accompanying job duties such as carpentry, building maintenance supervisor, architect, and engineer; and

(B) research careers along with the education, job skills, and experience required to achieve them.

(3) The student gains knowledge about building materials used in the construction industry. The student is expected to:

(A) identify various types of building materials and their uses;

(B) state the uses of various types of hardwoods and softwoods;

(C) identify the different grades and markings of wood building materials;

(D) describe the proper method of storing and handling building materials;

(E) state the uses of various types of engineered lumber;

(F) calculate the quantities of lumber and wood products using industry-standard methods; and

(G) describe the fasteners, anchors, and adhesives used in construction work and explain their uses.

(4) The student applies the proper and safe use of hand and power tools associated with carpentry. The student is expected to:

(A) identify the hand tools commonly used by carpenters and describe their uses;

(B) use hand tools in a safe and appropriate manner;

(C) state the general safety rules for operating all power tools, regardless of type;

(D) identify the portable power tools commonly used by carpenters and describe their uses; and

(E) use portable power tools in a safe and appropriate manner.

(5) The student interprets architectural and engineering working drawings and specifications. The student is expected to:

(A) describe the types of drawings usually included in a set of plans and list the information found on each type;

(B) identify the different types of lines used on construction drawings;

(C) identify selected architectural symbols commonly used to represent materials on plans;

(D) identify selected electrical, mechanical, and plumbing symbols commonly used on plans;

(E) identify selected abbreviations commonly used on plans;

(F) read and interpret plans, elevations, schedules, sections, and details contained in basic construction drawings;

(G) state the purpose of written specifications;

(H) identify and describe the parts of a specification; and

(I) demonstrate or describe how to perform a quantity takeoff for materials.

(6) The student gains knowledge of wood framing and the layout and construction of wood-framed floor systems using common and engineered lumber. The student is expected to:

(A) identify the different types of framing systems;

(B) read and interpret drawings and specifications to determine floor system requirements;

(C) identify floor and sill framing and support members;

(D) name the methods used to fasten sills to the foundation;

(E) select the proper girder or beam size from a list of available girders or beams given specific floor load and span data;

(F) list and recognize different types of bridging;

(G) list and recognize different types of flooring materials;

(H) explain the purposes of subflooring and underlayment;

(I) select the appropriate fasteners to be used in various floor framing systems;

(J) estimate the amount of material needed to frame a floor assembly;

(K) lay out and construct a floor assembly;

(L) install bridging;

(M) install joists for a cantilever-floor;

(N) install a subfloor using butt-joint plywood or oriented strand board panels; and

(O) install a single floor system using tongue-and-groove (T&G) plywood or oriented strand board (OSB) panels.

(7) The student knows how to lay out and frame walls and ceilings, rough-in door and window openings, construct corners and partition Ts, brace walls and ceilings, and apply sheathing. The student is expected to:

(A) identify the components of a wall and ceiling layout;

(B) describe the procedure for laying out a wood frame wall, including the installation of plates, corner posts, door and window openings, partition Ts, bracings, and firestops;

(C) describe the correct procedure for assembling and erecting an exterior wall;

(D) identify the common materials and methods used for installing sheathing on walls;

(E) lay out, assemble, erect, and brace exterior walls for a frame building;

(F) describe wall framing techniques used in masonry construction;

(G) explain the use of metal studs in wall framing;

(H) cut and install ceiling joists on a wood frame building; and

(I) estimate the materials required for frame walls and ceilings.

(8) The student gains knowledge of various types of framed roofs and how to frame these roofs using both stick-build and truss-build systems. The student is expected to:

(A) demonstrate an understanding of the terms associated with roof framing;

(B) identify the roof framing members used in gable and hip roofs;

(C) identify the methods used to calculate the length of a rafter;

(D) identify the various types of trusses used in roof framing;

(E) use a framing square, speed square, and calculator in laying out a roof;

(F) identify various types of sheathing used in roof construction;

(G) frame a gable roof with vent openings;

(H) erect a gable roof using trusses;

(I) frame a roof opening; and

(J) estimate the materials used for framing and sheathing a roof.

(9) The student knows the ingredients of concrete, various types of concrete, and methods to mix concrete. The student is expected to:

(A) identify the properties of cement;

(B) describe the composition of concrete;

(C) perform volume estimates for concrete;

(D) identify types of concrete reinforcement materials and describe their uses;

(E) identify various types of footings and explain their uses;

(F) identify the parts of various types of concrete forms;

(G) explain the safety procedures associated with the construction and use of concrete forms; and

(H) erect, plumb, and brace a simple concrete form with reinforcement.

(10) The student gains knowledge of various types of windows, skylights, and exterior doors. The student is expected to:

(A) identify various types of fixed, sliding, and swinging windows;

(B) identify the parts of a window installation;

(C) state the requirements for proper window installation;

(D) install a pre-hung window;

(E) identify the common types of exterior doors and explain how they are constructed;

(F) identify the parts of a door installation;

(G) identify types of thresholds used with exterior doors;

(H) install a pre-hung exterior door;

(I) identify the various types of locksets used on exterior doors and explain how the locksets are installed;

(J) install a lockset; and

(K) identify and explain the use and installation of various door and window hardware, including security hinges, keepers, deadbolts, and peep holes.

(11) The student is introduced to various types of stairs and the common building code requirements related to stairs. The student is expected to:

(A) identify the various types of stairs;

(B) identify the various parts of stairs;

(C) identify the materials used in the construction of stairs;

(D) interpret construction drawings of stairs;

(E) calculate the total rise, number and size of risers, and the number and size of treads required for a given stairway;

(F) lay out and cut stringers, risers, and treads; and

(G) build a small stair unit with a temporary handrail.

§127.101. Construction Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Construction Technology I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Construction Technology II, students will gain advanced knowledge and skills needed to enter the workforce as carpenters, building maintenance technicians, or supervisors or to prepare for a postsecondary degree in construction management, architecture, or engineering. Students will build on the knowledge base from Construction Technology I and are introduced to exterior and interior finish out skills. For safety and liability considerations, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student is provided with the knowledge to interpret various types of working drawings as they pertain to commercial construction. The student is expected to:

(A) recognize the difference between commercial and residential construction drawings;

(B) identify the basic keys, abbreviations, and other references contained in a set of commercial drawings;

(C) accurately read a set of commercial drawings;

(D) identify and document specific items from a door and window schedule;

(E) explain basic construction details and concepts employed in commercial construction; and

(F) calculate the floor area of each room in a floor plan.

(2) The student selects and installs common roofing materials for residential and light commercial projects. The student is expected to:

(A) identify the materials and methods used in roofing;

(B) explain the safety requirements for roof jobs;

(C) install fiberglass shingles on gable and hip roofs;

(D) close up a valley using fiberglass shingles;

(E) explain how to make various roof projections watertight when using fiberglass shingles;

(F) complete the proper cuts and install the main and hip ridge caps using fiberglass shingles;

(G) lay out, cut, and install a cricket or saddle;

(H) install wood shingles and shakes on roofs;

(I) describe how to close up a valley using wood shingles and shakes;

(J) complete the cuts and install the main and hip ridge caps using wood shakes or shingles; and

(K) demonstrate the techniques for installing other selected types of roofing materials.

(3) The student selects and installs various types of insulation in walls, floors, and attics. The student is expected to:

(A) describe the requirements for insulation;

(B) describe the characteristics of various types of insulation material;

(C) calculate the required amounts of insulation for a structure;

(D) install selected insulation materials;

(E) describe the requirements for moisture control and ventilation;

(F) install selected vapor barriers;

(G) describe various methods of waterproofing;

(H) describe air infiltration control requirements; and

(I) install selected building wraps.

(4) The student learns the processes to install various exterior siding materials. The student is expected to:

(A) describe the purpose of wall insulation and flashing;

(B) install selected common cornices;

(C) demonstrate lap and panel siding estimating methods;

(D) describe the types and applications of common wood siding;

(E) describe fiber-cement siding and its uses;

(F) describe the types and styles of vinyl and metal siding;

(G) describe the types and applications of stucco and masonry veneer finishes; and

(H) install three types of siding commonly used in the local area.

(5) The student knows the types and grades of steel framing materials and the process for installing metal framing for interior walls, exterior nonbearing walls, and partitions. The student is expected to:

(A) identify the components of a steel framing system;

(B) identify and select the tools and fasteners used in a steel framing system;

(C) identify applications for steel framing systems;

(D) demonstrate the ability to build back-to-back, box, and L-headers;

(E) layout and install a steel stud structural wall with openings to include bracing and blocking; and

(F) layout and install a steel-stud, non-structural wall with openings to include bracing and blocking.

(6) The student knows various types of gypsum drywall and their uses and the fastening devices and methods used to install them. The student is expect to:

(A) identify the different types of drywall and their uses;

(B) select the type and thickness of drywall required for specific installations;

(C) select fasteners for drywall installations;

(D) explain the fastener schedules for different types of drywall installations;

(E) perform single-layer and multi-layer drywall installations using different types of fastening systems, including nails, drywall screws, and adhesives;

(F) install gypsum drywall on steel studs;

(G) explain how soundproofing is achieved in drywall installations; and

(H) estimate material quantities for a drywall installation.

(7) The student knows the materials, tools, and methods used to finish and patch gypsum drywall. The student is expected to:

(A) state the differences between the six levels of finish established by industry standards and distinguish between finish levels by observation;

(B) identify the hand tools used in drywall finishing and demonstrate the ability to use these tools;

(C) identify the automatic tools used in drywall finishing;

(D) identify the materials used in drywall finishing and state the purpose and use of each type of material, including compounds, joint reinforcing tapes, trim materials, textures, and coatings;

(E) finish drywall using hand tools;

(F) recognize various types of problems that occur in drywall finishes and identify their causes;

(G) identify the correct methods for solving each type of problem that occurs in drywall finishes; and

(H) patch damaged drywall.

(8) The student installs metal doors and related hardware in steel-framed, wood-framed, and masonry walls. The student is expected to:

(A) identify various types of door jambs and frames;

(B) demonstrate the installation procedures for placing door jambs and frames in different types of interior partitions;

(C) identify different types of interior doors;

(D) identify different types of interior door hardware and demonstrate the installation procedures for them;

(E) list and identify items included on a typical door schedule; and

(F) demonstrate the procedure for placing and hanging a door.

(9) The student gains knowledge of the materials, layout, and installation of various types of suspended ceilings used in commercial construction as well as ceiling tiles, drywall suspension systems, and pan-type ceilings. The student is expected to:

(A) establish a level line;

(B) explain the common terms related to sound waves and acoustical ceiling materials;

(C) identify the different types of suspended ceilings;

(D) interpret plans related to ceiling layout;

(E) sketch the ceiling layout for a basic suspended ceiling; and

(F) install selected suspended ceilings.

(10) The student knows the types of trim used in finish work. The student is expected to:

(A) identify the different types of standard moldings and describe their uses;

(B) make square and miter cuts using a miter box or power miter saw;

(C) make coped joint cuts using a coping saw;

(D) select and use fasteners to install trim, including door trim, window trim, base trim, and ceiling trim; and

(E) estimate the quantities of different trim materials required for selected rooms.

(11) The student selects and installs base and wall cabinets and countertops. The student is expected to:

(A) state the classes and sizes of typical base and wall kitchen cabinets;

(B) identify cabinet components and hardware and describe their purposes;

(C) lay out factory-made cabinets, countertops, and backsplashes;

(D) explain the installation of an island base;

(E) recognize the common types of woods used to make cabinets;

(F) identify and cut the various types of joints used in cabinetmaking;

(G) build a cabinet from a set of drawings; and

(H) install plastic laminate on a countertop core.

§127.102. Mill and Cabinetmaking Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Architecture and Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Mill and Cabinetmaking Technology, students will gain knowledge and skills needed to enter the workforce in the area of mill work and cabinet manufacturing and installation. Students may also apply these skills to professions in carpentry or building maintenance supervision or use the skills as a foundation for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in cabinet design, tool usage, jointing methods, finishes, and industry-level practices such as numerical and computer-control production methods.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of mill and cabinetmaking. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(B) complete work orders and related paperwork;

(C) estimate supplies, materials, and labor costs for work orders;

(D) apply the principles of mathematics for accurate standard and metric measurements; and

(E) read and interpret appropriate blueprints, drawings, charts, and diagrams.

(2) The student knows the concepts and skills that form the core knowledge of mill and cabinetmaking. The student is expected to:

(A) demonstrate knowledge of cabinetmaking design;

(B) demonstrate knowledge of the use of woods, fasteners, hardware, glass, and mirrors; and

(C) demonstrate knowledge of the industrial processes and procedures used in mill and cabinetmaking.

(3) The student knows the function and application of the tools, equipment, technologies, and materials used in mill and cabinetmaking. The student is expected to:

(A) use in a safe manner hand and power tools and equipment commonly employed in mill and cabinetmaking;

(B) handle and dispose of environmentally hazardous materials used in mill and cabinetmaking;

(C) demonstrate the proper procedures to saw, plane, shape, turn, bore, mortise, and sand various types of woods; and

(D) demonstrate knowledge of new and emerging technologies that may affect mill and cabinetmaking.

(4) The student applies the concepts and skills of mill and cabinetmaking to simulated and actual work situations. The student is expected to:

(A) identify and construct the various joints used in cabinetmaking;

(B) demonstrate the proper procedures to glue, clamp, laminate, veneer, and inlay wood;

(C) demonstrate the proper procedures to construct and install cabinet doors, furniture doors, drawers, drawer guides, shelves, cabinet interiors, legs, posts, table tops, and cabinet tops; and

(D) apply proper finishing techniques.

§127.103. Masonry Technology I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Masonry Technology I provides information and techniques related to basic masonry and safety precautions. For safety and liability considerations, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student describes materials and techniques used in basic masonry. The student is expected to:

(A) explain how concrete masonry units (CMUs), or blocks, are used in construction;

(B) explain how clay masonry units (bricks) are used in construction;

(C) explain how stone is used in construction;

(D) describe how mortar and grout are used in masonry construction; and

(E) describe how wall structures are created using masonry units.

(2) The student identifies safe practices and expectations for the masonry industry. The student is expected to:

(A) identify the costs of job accidents;

(B) identify the causes of job accidents;

(C) recognize the hazards;

(D) demonstrate proper housekeeping techniques;

(E) observe mortar and concrete safety; and

(F) observe flammable liquid safety.

(3) The student demonstrates awareness of safe practices and expectations for the masonry industry and recognizes proper personal protective equipment. The student is expected to:

(A) explain protective lenses and face shields;

(B) describe hearing protection;

(C) identify gloves used in the masonry trade; and

(D) use respirators.

(4) The student understands the importance of being trained in and aware of safe practices and expectations for the masonry industry, including working safely from elevated surfaces. The student is expected to:

(A) explain fall protection procedures;

(B) describe personal fall arrest systems;

(C) list basic scaffold safety guidelines; and

(D) explain how to protect against falling objects.

(5) The student explains safe practices and expectations for the masonry industry. The student is expected to:

(A) explain the safe use of hand tools;

(B) demonstrate the safe use of saws;

(C) explain the safe use of mixers;

(D) explain the safe use of grinders;

(E) describe the safe use of powder-actuated tools;

(F) explain how to work safely around a fork lift;

(G) list basic electrical safety guidelines;

(H) explain how to store and stockpile masonry materials safely; and

(I) demonstrate how to stack brick safely.

(6) The student identifies masonry hand tools. The student is expected to:

(A) demonstrate how to use trowels;

(B) demonstrate how to use hammers and chisels;

(C) demonstrate how to use jointers and brushes; and

(D) identify other hand tools used in masonry.

(7) The student understands the importance of measurements and measuring tools used in masonry. The student is expected to:

(A) demonstrate how to use the modular spacing rule, brick spacing rule, oversized brick spacing rule, and steel tape measure;

(B) demonstrate how to use levels;

(C) demonstrate how to use chalk boxes, squares, plumb-bobs, and laser levels; and

(D) demonstrate how to use corner poles, lines, and fasteners.

§127.104. Masonry Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Masonry Technology I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Masonry Technology II is designed to further enhance the skills and knowledge of the beginning masonry student. For safety and liability considerations, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student recognizes mathematical concepts used in masonry and is able to apply mathematical concepts used in masonry. The student is expected to:

(A) read a six-foot rule;

(B) read other measuring devices;

(C) read a mason's rule;

(D) apply the 3-4-5 formula to square a corner;

(E) recognize modular increments;

(F) describe how to determine areas and circumferences;

(G) explain the basic parts of a set of drawings;

(H) identify lines, symbols, and abbreviations used on drawings;

(I) explain scales and dimensions used on drawings;

(J) explain types of construction drawings;

(K) identify the purpose of specifications, standards, and codes used in the building industry and the sections that pertain to masonry;

(L) explain the purpose of specifications, standards, and codes; and

(M) describe the purpose of inspections and testing.

(2) The student learns to describe the ingredients and types of mortar. The student is expected to:

(A) explain the use of Portland cement, hydrated lime, and sand;

(B) identify masonry cement;

(C) explain pre-blended mortars;

(D) explain the use of water and admixtures;

(E) list the types of masonry mortars;

(F) explain the properties of plastic mortar;

(G) identify the properties of hardened mortar;

(H) identify the common problems found in mortar application and their solutions;

(I) describe the effects of improper proportioning and poor-quality materials;

(J) explain the effects of severe weather and tempering;

(K) describe efflorescence;

(L) set up, maintain, and dispose of mortar;

(M) maintain the mortar mixing area;

(N) set up a mixing area; and

(O) mix mortar with a power mixer.

(3) The student describes how to install concrete masonry units. The student is expected to:

(A) identify the characteristics of concrete masonry units;

(B) explain how to set up, layout, and bond concrete masonry units;

(C) explain how to lay and tool concrete masonry units;

(D) explain how to clean concrete masonry units;

(E) identify the characteristics of brick;

(F) demonstrate how to set up, layout, and bond brick;

(G) demonstrate how to lay and tool brick;

(H) demonstrate how to clean brick;

(I) cut with chisels and hammers;

(J) cut with masonry hammers;

(K) cut with saws and splitters;

(L) check units and cuts;

(M) install masonry reinforcements; and

(N) install masonry accessories.

§127.105. Architectural Design I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Algebra I and English I. Recommended prerequisites: Geometry, Principles of Architecture, and Principles of Construction. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Architectural Design I, students will gain knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design I includes the knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies key cognitive skills and academic behaviors to the requirements of architectural studies. The student is expected to:

(A) self-monitor learning needs and seek assistance when needed;

(B) practice study habits necessary to manage academic pursuits and requirements;

(C) strive for accuracy and precision;

(D) complete and master tasks;

(E) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(F) complete work orders and related paperwork;

(G) estimate jobs, schedules, and practices related to legal restrictions;

(H) read and interpret appropriate architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins; and

(I) apply descriptive geometry related to auxiliary views, revolutions, and intersections.

(2) The student knows the concepts and skills that form the technical knowledge of architectural design. The student is expected to:

(A) demonstrate knowledge of architectural design principles;

(B) determine building code and zoning requirements for building types in a selected area; and

(C) demonstrate knowledge of the various grades and types of construction materials.

(3) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural drawing. The student is expected to:

(A) use the tools, materials, and equipment commonly employed in the field of architecture in a safe manner;

(B) handle and dispose of environmentally hazardous materials; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architecture.

(4) The student applies the concepts and skills of the profession to simulated or actual work situations. The student is expected to:

(A) use problem-solving skills to analyze a situation and identify a problem to be solved;

(B) break a complex problem into component parts that can be analyzed and solved separately;

(C) strive for accuracy and precision;

(D) work independently;

(E) work collaboratively;

(F) research an architectural project;

(G) design and present an effective architectural product;

(H) present a final architectural product for critique;

(I) apply architectural lettering techniques;

(J) develop preliminary sketches of a nonresidential or residential architectural design;

(K) use traditional technical architectural drafting techniques to create drawings;

(L) demonstrate through drawings the development of maximum efficiency of circulation within areas or rooms;

(M) develop a site plan using maximum orientation of the building relative to views, sun, and wind direction;

(N) develop building designs to ensure compatibility between interior and exterior to enhance overall appearance;

(O) draw schematic site plans, floor plans, building elevations, sections, perspectives, and character sketches from bubble diagrams;

(P) draw scaled wall thickness plans, elevations, and sections;

(Q) develop details of floor and wall sections as required;

(R) demonstrate knowledge of the Americans with Disabilities Act;

(S) assemble an architectural design in three dimensions;

(T) customize screen menus to fit specific problems or needs;

(U) construct points, lines, and other geometric forms using accepted computer-aided design methods;

(V) create a freehand simple one-point perspective;

(W) use a computer system to create a bill of materials;

(X) use a computer system to create and modify architectural drawings; and

(Y) plot architectural drawings for presentation.

(5) The student begins exploration, development, and organization of ideas from the surroundings. The student is expected to:

(A) begin illustrating ideas for architectural projects from direct observation, experiences, imagination; and

(B) begin comparing and contrasting the use of architectural elements such as color, texture, form, line, space, value, and architectural principles such as emphasis, pattern, rhythm, balance, proportion, and unity in personal architectural projects and those of others using vocabulary accurately.

(6) The student begins expressing ideas through original architectural projects using a variety of media with appropriate skill. The student is expected to:

(A) create beginning visual solutions by elaborating on direct observation, experiences, and imagination;

(B) create beginning designs for practical applications; and

(C) demonstrate beginning effective use of architectural media and tools in design, drawing, painting, printmaking, and sculpture such as model building.

(7) The student demonstrates an understanding of architectural history and culture as records of human achievement from ancient Egypt to the present. The student is expected to:

(A) compare and contrast historical and contemporary styles, identifying general themes and trends;

(B) describe general characteristics in architectural projects from a variety of cultures; and

(C) compare and contrast career opportunities in architecture.

(8) The student makes beginning informed judgments about personal architectural projects and the architectural projects of others. The student is expected to:

(A) interpret, evaluate, and justify architectural artistic decisions in personal architectural projects; and

(B) select and analyze original architectural projects, portfolios, and exhibitions by peers or others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings.

(9) The student makes informed career decisions that reflect career goals. The student is expected to:

(A) determine employment and entrepreneurial opportunities and preparation requirements in architecture and related fields;

(B) propose short-term and long-term career goals;

(C) describe technology used in architectural careers;

(D) maintain a project portfolio that documents experience by using graphic or written documentation of architectural-related projects; and

(E) develop a professional resume.

(10) The student applies communication, science, and mathematics knowledge and skills to architectural projects. The student is expected to:

(A) prepare professional communications, technical reports, and presentations;

(B) apply mathematical equations; and

(C) apply scientific principles and concepts.

(11) The student knows the concept of sustainability. The student is expected to:

(A) identify the nature of energy;

(B) relate potential energy, kinetic energy, and heat energy to conservation;

(C) create an energy model;

(D) evaluate different methods of energy transfer;

(E) recognize sustainable design as it relates to architectural design; and

(F) define green architecture as related to the field of architecture.

§127.106. Architectural Design II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Architectural Design I or Advanced Interior Design and Geometry. Recommended prerequisites: Principles of Architecture and Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Architectural Design II, students will gain advanced knowledge and skills needed to enter a career in architecture or construction or prepare a foundation toward a postsecondary degree in architecture, construction science, drafting, interior design, or landscape architecture. Architectural Design II includes the advanced knowledge of the design, design history, techniques, and tools related to the production of drawings, renderings, and scaled models for nonresidential or residential architectural purposes.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of architecture. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(B) complete work orders and related paperwork;

(C) estimate jobs, schedules, and standard industry practices related to legal restrictions;

(D) read and interpret architectural symbols, schematics, blueprints, work drawings, manuals, and bulletins; and

(E) apply descriptive geometry related to auxiliary views, revolutions, and intersections.

(2) The student knows the concepts and skills that form the technical knowledge of architectural computer-aided drafting. The student is expected to:

(A) demonstrate knowledge of architectural design principles;

(B) determine building code and zoning requirements for building types in a selected area; and

(C) demonstrate knowledge of the various grades and types of construction materials.

(3) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural computer-aided design. The student is expected to:

(A) use the tools, materials, and equipment commonly employed in the field of architectural computer-aided design in a safe manner;

(B) handle and dispose of environmentally hazardous materials used in the field of architecture in accordance with the material safety data sheet (MSDS), the Occupational Safety and Health Administration (OSHA), and the Environmental Protection Agency (EPA) regulations; and

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architecture.

(4) The student applies the concepts and skills of the trade to simulated and actual work situations. The student is expected to:

(A) use problem-solving skills to analyze a situation to identify a problem to be solved;

(B) break a complex problem into component parts that can be analyzed and solved separately;

(C) strive for accuracy and precision;

(D) work independently;

(E) work collaboratively;

(F) research an architectural project;

(G) design and present an effective architectural product;

(H) present a final architectural product for critique;

(I) apply architectural lettering techniques;

(J) develop preliminary sketches of a residential plan or nonresidential plan;

(K) demonstrate through drawings the development of maximum efficiency of circulation within areas or rooms;

(L) develop a site plan using maximum orientation of the building relative to views, sun, and wind direction;

(M) draw building designs and styles to ensure compatibility between interior and exterior to enhance overall appearance;

(N) draw schematic site plans, floor plans, roof plans, building elevations, sections, perspectives, and character sketches using design development techniques;

(O) draw scaled wall thickness plans, interior elevations, and sections;

(P) develop details, sections, floor and wall sections, ceiling and roof sections, door and window sections, and other sections as required;

(Q) assemble an architectural design in three dimensions;

(R) research the Green Building Rating System as defined by the U.S. Green Building Council; and

(S) create a project demonstrating sustainable design as it relates to architectural design as defined by the U.S. Green Building Council.

(5) The student applies the concepts and skills of the trade to simulated and actual work situations. The student is expected to:

(A) customize screen menus to fit specific problems or needs;

(B) construct architectural drawings using advanced computer-aided design drafting skills;

(C) create two- or three-point perspectives;

(D) create three-dimensional solid models;

(E) view three-dimensional objects in several different positions;

(F) use a computer system to create a bill of materials;

(G) use a computer-aided drafting system to create and modify nonresidential or residential architectural drawings;

(H) plot architectural drawings for presentation; and

(I) render three-dimensional objects with applied materials.

(6) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) describe how teams function;

(B) use teamwork to solve problems;

(C) distinguish between the roles of team leaders and team members;

(D) identify characteristics of good leaders;

(E) identify employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and inequality;

(G) use time-management techniques to develop and maintain work schedules and meet deadlines; and

(H) complete work according to established criteria.

(7) The student sustains exploration, development, and organization of ideas from their surroundings. The student is expected to:

(A) use advanced skills to illustrate ideas for architectural projects from direct observation, experiences, and imagination; and

(B) use advanced skills comparing and contrasting the use of architectural elements such as color, texture, form, line, space, and value and architectural principles such as emphasis, pattern, rhythm, balance, proportion, and unity in personal architectural projects and those of others using vocabulary accurately.

(8) The student uses advanced skills expressing ideas through original architectural projects using a variety of media with appropriate skill. The student is expected to:

(A) create, using advanced skills, visual solutions by elaborating on direct observation, experiences, and imagination;

(B) create, using advanced skills, designs for practical applications; and

(C) demonstrate, using advanced skills, effective use of architectural media and tools in design, drawing, painting, printmaking, and sculpture such as advanced model building.

(9) The student demonstrates an understanding of architectural history and culture as records of human achievement by examining the connections between twentieth and twenty-first century architecture and art and connections between Greek and Roman architecture and art. The student is expected to:

(A) compare and contrast historical and contemporary styles by identifying general themes and trends;

(B) describe general characteristics in architectural artworks from a variety of cultures; and

(C) compare and contrast career opportunities in architecture.

(10) The student makes advanced, informed judgments about personal architectural projects and the architectural projects of others. The student is expected to:

(A) interpret, evaluate, and justify architectural artistic decisions in personal architectural artworks; and

(B) select and analyze original architectural artworks, portfolios, and exhibitions by peers and others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings.

(11) The student exhibits employability skills that lead to job success in the architectural design industry. The student is expected to:

(A) demonstrate effective verbal, nonverbal, written, and electronic communication skills;

(B) demonstrate effective methods to secure, maintain, and terminate employment;

(C) demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;

(D) evaluate the relationship of good physical and mental health to job success and achievement;

(E) demonstrate appropriate grooming and appearance for the workplace;

(F) demonstrate appropriate business and personal etiquette in the workplace;

(G) exhibit productive work habits and attitudes; and

(H) maintain a project portfolio that documents architectural projects using a variety of multimedia techniques.

§127.107. Interior Design I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Algebra I and English I. Recommended prerequisites: Principles of Architecture and Principles of Construction or Architectural Design I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Interior Design I is a technical course that addresses psychological, physiological, and sociological needs of individuals by enhancing the environments in which they live and work. Students will use knowledge and skills related to interior and exterior environments, construction, and furnishings to make wise consumer decisions, increase productivity, promote sustainability, and compete in industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates effective decision-making skills related to housing needs throughout the life cycle. The student is expected to:

(A) determine housing characteristics common to various world cultures and regions such as roof styles and materials, foundation types, and construction materials;

(B) describe factors affecting housing choices;

(C) describe the relationship between family housing and economics;

(D) assess the impact of demographic trends on psychological, physiological, and social needs when making housing decisions;

(E) analyze the impact of housing decisions on family relationships and the management of multiple family, community, and wage-earner roles;

(F) analyze aspects of community planning that impact housing decisions; and

(G) compare the availability, desirability, and financial feasibility of housing alternatives.

(2) The student demonstrates effective management practices related to the housing budget. The student is expected to:

(A) research consumer rights and responsibilities associated with housing;

(B) contrast the impact of needs and wants on the costs of housing;

(C) analyze legal and financial aspects of purchasing, leasing, and renting housing; and

(D) summarize laws and public policies that impact housing decisions and costs.

(3) The student recommends practices that will create a safe, secure, and well-maintained home. The student is expected to:

(A) research the effect of housing conditions on health, safety, and the environment;

(B) develop a plan for detecting safety hazards and maintaining a safe home; and

(C) research and describe housing features for individuals with special needs.

(4) The student proposes methods to create quality living environments. The student is expected to:

(A) apply elements and principles of design to living environments;

(B) apply principles of space utilization, zoning, and traffic patterns in planning and furnishing housing; and

(C) propose design and furnishings features to meet the special needs of individuals and families.

(5) The student considers factors affecting housing construction when making plans and consumer decisions related to housing. The student is expected to:

(A) identify architectural styles and architectural features exemplified in housing;

(B) summarize considerations for housing site selection;

(C) evaluate basic housing construction and finishing considerations; and

(D) research and describe the effects of technology on current and future housing trends.

(6) The student evaluates factors influencing the housing industry. The student is expected to:

(A) research and describe the interrelationship of the housing industry with the economy; and

(B) determine sources and availability of construction materials.

(7) The student assesses environmental issues affecting housing. The student is expected to:

(A) evaluate the effects of landscaping on housing and the environment; and

(B) determine techniques, materials, and technological applications that can be used in housing to conserve energy and other resources and promote sustainability.

(8) The student uses effective design practices to evaluate residential and nonresidential interiors. The student is expected to:

(A) apply elements and principles of design to interiors;

(B) plan for effective use of space zones and placement of furnishings;

(C) apply drafting techniques, including scaled drawings that facilitate space planning and technological applications;

(D) determine the effect of technological applications on interior design practices;

(E) differentiate design practices to meet individual, business, and special needs;

(F) research energy conservation and sustainability practices that affect interior design; and

(G) summarize laws, public policies, and regulations impacting interior environments.

(9) The student determines appropriate lighting for residential and nonresidential interiors. The student is expected to:

(A) analyze the functions and principles of lighting;

(B) compare lighting types and methods of control; and

(C) recommend lighting applications for specific interior needs, including safety, conservation, and sustainability.

(10) The student chooses appropriate background materials to complement various residential and nonresidential interior settings. The student is expected to:

(A) compare criteria for selection, use, and care of floor coverings;

(B) evaluate selection, use, and care of wall treatments;

(C) evaluate selection and care of ceilings; and

(D) evaluate selection, use, and care of window treatments and their suitability for various window types.

(11) The student demonstrates effective decision-making skills in applying principles of design and space to residential and nonresidential interior environments. The student is expected to:

(A) examine the relationship of interior decisions to individual and family needs and wants;

(B) examine the influences of demographics, society, and culture on interior design decisions;

(C) explain the relationship of local and global economics to interior environments;

(D) propose strategies for controlling costs and allocating resources; and

(E) budget for acquisition of products to enhance interior environments.

(12) The student evaluates the role of furniture in interior design for residential and nonresidential settings. The student is expected to:

(A) distinguish between various characteristics of period styles throughout history;

(B) determine the influence of period styles on interior design throughout history;

(C) summarize selection and care of quality furniture;

(D) assess aesthetic and functional aspects of furniture, including ergonomics and special needs requirements; and

(E) research and describe the impact of technology on furniture, including current trends.

(13) The student determines the role of appliances in interior design for residential and nonresidential settings. The student is expected to:

(A) analyze the functional and aesthetic aspects of appliances;

(B) determine the process for selection of appliances, including consideration of special needs;

(C) research and explain the safe use and care of appliances, including current trends; and

(D) research technological advancements in appliances.

(14) The student evaluates the role of accessories in interior design for residential and nonresidential settings. The student is expected to:

(A) identify types of accessories, including eco-friendly accessories;

(B) describe criteria for selection of accessories;

(C) analyze care of accessories;

(D) demonstrate a knowledge of arranging accessories; and

(E) research eco-friendly options for accessories.

(15) The student applies the concepts and skills of the industry to simulated work situations. The student is expected to:

(A) customize screen menus to fit specific problems or needs;

(B) construct points, lines, and other geometric forms using accepted computer-aided design methods;

(C) create a freehand, simple one-point perspective;

(D) use applications to create a bill of materials, including budgeting considerations;

(E) use technological applications to create and modify architectural interior drawings; and

(F) print and plot architectural interior drawings for presentation.

(16) The student creates a professional portfolio featuring original projects using a variety of media. The student is expected to:

(A) illustrate ideas for interior design from direct observation, experiences, and imagination;

(B) compare and contrast the use of interior design elements and principles in personal design plans and design plans of others using industry terminology;

(C) create visual solutions by elaborating on direct observation, experience, and imagination;

(D) create designs for practical applications; and

(E) demonstrate effective use of interior design media and tools in designing, drawing, painting, printmaking, and sculpture making such as model building.

(17) The student maintains a professional portfolio to document knowledge, skills, and abilities. The student is expected to:

(A) select educational and work history highlights to create a personal resume;

(B) develop a resume using word processing technology;

(C) contact professional references to acquire recommendations;

(D) obtain appropriate letters of recommendation; and

(E) document and maintain a record of work experiences, licenses, certifications, credentials, and education and training to build a portfolio.

(18) The student applies the concepts and skills of the profession to simulated or actual work situations. The student is expected to:

(A) use problem-solving skills to analyze a situation and to identify a problem to be solved;

(B) break a complex problem into component parts that can be analyzed and solved separately;

(C) strive for accuracy and precision;

(D) work independently;

(E) work collaboratively;

(F) research an interior design project;

(G) design and present an effective interior design product; and

(H) present a final interior design product for critique that demonstrates clear and effective communication.

§127.108. Interior Design II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: English II, Geometry, and Interior Design I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Interior Design II is a technical laboratory course that includes the application of the employability characteristics, principles, processes, technologies, communication, tools, equipment, and materials related to interior design to meet industry standards.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the employability characteristics of a successful worker in the modern workplace. The student is expected to:

(A) research employment opportunities, including internship, entrepreneurship, and preparation requirements, in the field of architectural interior design;

(B) demonstrate an understanding of group participation and leadership related to citizenship and career preparation;

(C) research employers' expectations and appropriate work habits;

(D) apply the competencies related to resources, information, systems, and technology in appropriate settings and situations;

(E) demonstrate knowledge of the concepts and skills related to health and safety in the workplace, as specified by appropriate governmental regulations; and

(F) maintain a project portfolio that documents interior design projects using a variety of multimedia techniques with a professional resume reflecting current trends.

(2) The student applies core academic skills to the requirements of architectural interior design. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(B) complete work orders and related paperwork;

(C) estimate cost of supplies, materials, and labor; and

(D) read and interpret schematics, floor plans, work drawings, catalogs, manuals, and bulletins.

(3) The student knows the concepts and skills that form the core knowledge of architectural interior design. The student is expected to:

(A) demonstrate knowledge of interior design theory;

(B) apply layout and design lines, symbols, and drawings;

(C) demonstrate knowledge of the theory and use of color in interior design; and

(D) demonstrate knowledge of the principles of computer-aided drafting.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in architectural interior design. The student is expected to:

(A) use tools, materials, and equipment commonly employed in the field of architectural interior design in a safe manner;

(B) demonstrate an understanding of how to properly handle and dispose of environmentally hazardous materials used in the field of architectural interior design in accordance with the material safety data sheet (MSDS), Occupational Safety and Health Administration (OSHA), and Environmental Protection Agency (EPA) regulations;

(C) demonstrate knowledge of new and emerging technologies that may affect the field of architectural interior design; and

(D) use and apply job-appropriate computer applications for a given task such as printing and plotting elevations, floor plans, and additional presentation documents or illustrations.

(5) The student applies the concepts and skills of interior design to simulated and actual work situations. The student is expected to:

(A) apply architectural lettering techniques;

(B) render freehand nonresidential or residential interior design working drawings;

(C) draw a single-line floor plan from design development techniques for a residential or nonresidential project;

(D) select interior furnishings and finish materials for a residence or a nonresidential office interior;

(E) prepare and draw dimension plans for construction documents;

(F) produce interior drawings using one-point and two-point perspective;

(G) develop and complete schematic design drawings;

(H) apply the essential knowledge and skills in architectural interior design to career preparation learning experiences, including job shadowing, mentoring, or apprenticeship training programs;

(I) create an original, sustainable design as it relates to interior design;

(J) customize screen menus in drawing programs; and

(K) apply industry-accepted, computer-aided drafting skills.

(6) The student uses valid and reliable research strategies to determine current industry standards. The student is expected to:

(A) research and define green architecture as related to the field of interior design;

(B) research the Americans with Disabilities Act;

(C) research the guidelines for kitchen and bath design as defined by The National Kitchen and Bath Industry (NKBA);

(D) research traditional and period design styles of upholstery;

(E) research new and emerging technologies that may affect the field of furniture repair and upholstery services;

(F) research the types, properties, and uses of paints, varnishes, polishes, and waxes; and

(G) research an architectural project such as urban renewal, green architecture, or innovative design.

(7) The student understands the concepts and skills that form the core knowledge of furniture repair and upholstery. The student is expected to:

(A) identify styles and periods of furniture;

(B) identify the various types and properties of woods; and

(C) identify different fabrics, materials, and finishes and their characteristics.

(8) The student knows the function and application of the tools, equipment, technologies, and materials used in furniture repair and upholstery. The student is expected to:

(A) use tools, materials, and equipment commonly employed in the field of furniture repair and upholstery services; and

(B) handle and dispose of environmentally hazardous materials used in the field of furniture repair and upholstery.

(9) The student applies the concepts and skills of furniture repair and upholstery to simulated and actual work situations. The student is expected to:

(A) apply the woodworking skills required for furniture finishing and repair;

(B) demonstrate knowledge of the types, properties, and uses of paints, varnishes, polishes, and waxes;

(C) disassemble and reassemble furniture;

(D) repair dents, marks, and scratches by using fillers and stains;

(E) perform the tasks of fabrication and repair and disassembly and reassembly such as tacking, nailing, gluing, measuring, layout, cutting, sewing, and fitting materials;

(F) apply materials to furniture such as filling, padding, springs, and fabric;

(G) use problem-solving skills to analyze a situation to identify a problem to be solved;

(H) break a complex problem into component parts that can be separately analyzed and solved;

(I) strive for accuracy and precision;

(J) work independently;

(K) work collaboratively;

(L) design and present an effective interior design product; and

(M) present a final interior design product for critique that demonstrates clear and effective communication.

§127.109. Electrical Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture or Principles of Construction. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Electrical Technology I, students will gain knowledge and skills needed to enter the workforce as an electrician or building maintenance supervisor, prepare for a postsecondary degree in a specified field of construction or construction management, or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, electrical theory, tools, codes, installation of electrical equipment, and the reading of electrical drawings, schematics, and specifications.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies the issues associated with electrical hazards found on a jobsite. The student is expected to:

(A) demonstrate safe working procedures in a construction environment;

(B) explain the purpose of the Occupational Safety and Health Administration (OSHA) and how it promotes safety on the job;

(C) identify electrical hazards and how to avoid or minimize them in the workplace; and

(D) explain safety issues concerning lockout and tagout procedures, personal protection using assured grounding and isolation programs, confined space entry, respiratory protection, and fall protection.

(2) The student learns conduit bending and installation. The student is expected to:

(A) identify the methods of hand bending conduit;

(B) identify the various methods used to install conduit;

(C) use mathematical formulas to determine conduit bends;

(D) make 90 degree bends, back-to-back bends, offsets, kicks, and saddle bends using a hand bender; and

(E) cut, ream, and thread conduit.

(3) The student gains knowledge of the hardware and systems used by an electrician to mount and support boxes, receptacles, and other electrical components. The student is expected to:

(A) identify and explain the use of threaded fasteners;

(B) identify and explain the use of non-threaded fasteners;

(C) identify and explain the use of anchors;

(D) demonstrate the correct applications for fasteners and anchors; and

(E) install fasteners and anchors.

(4) The student learns the electrical concepts used in Ohm's law applied to direct current and series circuits and understands series parallel circuits, resistive circuits, Kirchhoff's voltage and current laws, and circuit analysis. The student is expected to:

(A) recognize what atoms are and what atoms are composed of;

(B) define voltage and identify the ways in which it can be produced;

(C) explain the difference between conductors and insulators;

(D) define the units of measurement used to measure the properties of electricity;

(E) explain how voltage, current, and resistance are related to each other;

(F) calculate an unknown value using the formula for Ohm's law;

(G) explain the different types of meters used to measure voltage, current, and resistance;

(H) calculate the amount of power used by a circuit using the power formula;

(I) explain the basic characteristics of a series, parallel, and combined series-parallel circuit;

(J) calculate, using Kirchhoff's current law, the total current in parallel and series-parallel circuits; and

(K) find the total amount of resistance in a series, parallel, or combined series-parallel circuit.

(5) The student gains knowledge in selecting, using, and safely maintaining common electrical test equipment. The student is expect to:

(A) explain how to operate test equipment such as ammeter, ohmmeter, volt-ohm-multimeter, continuity tester, and voltage tester;

(B) explain how to read specific test equipment and convert from one scale to another when using specified test equipment;

(C) explain the importance of proper meter polarity; and

(D) explain the difference between digital and analog meters.

(6) The student uses the National Electrical Code. The student is expected to:

(A) explain the purpose and history of the National Electrical Code;

(B) describe the layout of and explain how to navigate the National Electrical Code;

(C) describe the purpose of the National Electrical Manufacturers Association and National Fire Protection Association; and

(D) explain the role of testing laboratories.

(7) The student learns the types and applications of raceways, wireways, and ducts. The student is expected to:

(A) describe various types of cable trays and raceways;

(B) identify and select various types and sizes of raceways;

(C) identify and select various types and sizes of cable raceways;

(D) identify and select various types of raceway fittings;

(E) identify various methods used to install raceways;

(F) demonstrate knowledge of National Electrical Code raceway requirements;

(G) describe procedures for installing raceways and boxes on masonry surfaces, metal stud systems, wood-framed systems, and drywall surfaces; and

(H) recognize safety precautions that must be followed when working with boxes and raceways.

(8) The student learns the types and applications of conductors and wiring techniques. The student is expected to:

(A) demonstrate the various wire sizes using a wire in accordance with American Wire Gauge standards;

(B) identify insulation and jacket types according to conditions and applications;

(C) describe voltage ratings of conductors and cables;

(D) read and identify markings on conductors and cables;

(E) use the tables in the National Electrical Code to determine the ampacity of a conductor;

(F) state the purpose of stranded wire;

(G) state the purpose of compressed conductors;

(H) describe the different materials from which conductors are made;

(I) describe the different types of conductor insulation;

(J) describe the color coding of insulation;

(K) describe instrumentation control wiring;

(L) describe the equipment required for pulling wire through conduit;

(M) describe the procedure for pulling wire through conduit;

(N) install conductors in conduit; and

(O) pull conductors in a conduit system.

(9) The student learns electrical symbols and their use in design drawings. Additionally, students learn to interpret schematics, one-line diagrams, and wiring diagrams. The student is expected to:

(A) explain the basic layout of a design drawing;

(B) describe the information included in the title block of a drawing;

(C) identify common symbols and the various types of lines used on drawings;

(D) understand the use of architect's and engineer's scales;

(E) interpret electrical drawings such as site plans, floor plans, and detail drawings;

(F) read equipment schedules found on electrical drawings; and

(G) describe the type of information included in electrical specifications.

(10) The student learns the electrical devices and wiring techniques used in commercial and industrial construction and maintenance. The student is expected to:

(A) identify and state the functions and ratings of special switches such as single-pole, double-pole, three-way, four-way, dimmer, and safety switches;

(B) explain National Electrical Manufacturers Association classifications as they relate to switches and enclosures;

(C) explain the National Electrical Building Code requirements concerning wiring devices;

(D) identify and state the functions and ratings of wiring devices such as straight blade, twist lock, and pin and sleeve receptacles;

(E) identify and define receptacle terminals and disconnects;

(F) identify and define ground fault circuit interrupters;

(G) explain the box mounting requirements in the National Building Code;

(H) use appropriate tools and connectors to strip and splice wires together;

(I) identify and state the functions of limit switches and relays; and

(J) identify and state the function of switchgear.

(11) The student learns the electrical devices and wiring techniques used in residential construction maintenance. The student is expected to:

(A) describe how to determine electric service requirements for dwellings;

(B) explain the grounding requirements of a residential electric service;

(C) calculate and select service-entrance equipment;

(D) select the proper wiring methods for various types of residences;

(E) explain the role of the National Electrical Code in residential wiring;

(F) compute branch circuit loads and explain their installation requirements;

(G) explain the types and purposes of equipment grounding conductors;

(H) explain the purpose of ground-fault circuit interrupters and tell where they must be installed;

(I) determine the size of outlet boxes and select the proper type for different wiring methods;

(J) describe rules for installing electric space heating and heating, ventilating, and air conditioning equipment;

(K) describe the installation rules for electrical systems around swimming pools, spas, and hot tubs;

(L) describe the installation and control of lighting fixtures; and

(M) explain how wiring devices are selected and installed.

§127.110. Electrical Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Electrical Technology I. Recommended prerequisite: Principles of Architecture or Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Electrical Technology II, students will gain advanced knowledge and skills needed to enter the workforce as an electrician, a building maintenance technician, or a supervisor; prepare for a postsecondary degree in a specified field of construction or construction management; or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, electrical theory, tools, codes, installation of electrical equipment, alternating current and direct current motors, conductor installation, installation of electrical services, and electric lighting installation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the issues associated with electrical hazards found on a jobsite. The student is expected to:

(A) demonstrate safe working procedures in a construction environment;

(B) explain the purpose of the Occupational Safety and Health Administration (OSHA) and how it promotes safety on the job;

(C) identify electrical hazards and how to avoid or minimize them in the workplace; and

(D) explain safety issues concerning lockout and tagout procedures, personal protection using assured grounding and isolation programs, confined space entry, respiratory protection, and fall protection.

(2) The student gains knowledge of alternating current and direct current motors with specific attention being given to main parts, circuits, and connections. The student is expected to:

(A) define terms such as ampacity, branch circuit, circuit breaker, controller, duty, full-load amps, ground fault circuit interrupter, interrupting rating, motor circuit switch, thermal protector, National Electrical Manufacturers Association design letter, non-automatic, overcurrent, overload, rated full-load speed, rated horsepower, remote control circuit, service factor, and thermal cutout;

(B) describe the various types of motor enclosures;

(C) describe how the rated voltage of a motor differs from the system voltage;

(D) describe the basic construction and components of a three-phase squirrel cage induction motor;

(E) explain the relationships among speed, frequency, and the number of poles in a three-phase induction motor;

(F) describe how torque is developed in an induction motor;

(G) explain how and why torque varies with rotor reactance and slip;

(H) define percent slip and speed regulation;

(I) explain how the direction of a three-phase motor is reversed;

(J) describe the component parts and operating characteristics of a three-phase wound-rotor induction motor;

(K) define torque, starting current, and armature reaction as they apply to direct current motors;

(L) explain how the direction of rotation of a direct current motor is changed;

(M) describe the design and characteristics of direct current shunt, series, and compound motors;

(N) describe dual-voltage motors and their applications;

(O) describe the methods for determining various motor connections; and

(P) describe general motor protection requirements as delineated by the National Electrical Code.

(3) The student learns the purpose for grounding and bonding electrical systems. The student is expected to:

(A) explain the purpose of grounding and the scope of the National Electrical Code;

(B) distinguish between a short circuit and a ground fault;

(C) define the National Electrical Code ground-related terms;

(D) distinguish between system grounding and equipment grounding;

(E) use the National Electrical Code to size the grounding electrode conductor for various alternating current systems;

(F) explain the National Electrical Code requirements for the installation and physical protection of grounding electrode conductors;

(G) explain the function of the grounding electrode system and determine which grounding electrodes must be used;

(H) define electrodes and explain the resistance requirements for electrodes using the National Electrical Code;

(I) use the National Electrical Code to size the equipment grounding conductor for raceways and equipment;

(J) explain the function of the main bonding jumper and system bonding jumpers in the grounding system and size the bonding jumpers for various applications;

(K) size the main bonding jumper for a service using multiple service disconnecting means;

(L) explain the National Electrical Code requirements for bonding of enclosures and equipment;

(M) explain effective grounding and its importance in clearing ground faults and short circuits;

(N) explain the purposes of the grounded conductor neutral in operation of overcurrent devices;

(O) explain the National Electrical Code requirements for grounding separately derived systems, including transformers and generators;

(P) explain the National Electrical Code requirements for grounding at more than one building; and

(Q) explain the National Electrical Code grounding requirements for systems over 600 volts.

(4) The student properly bends all sizes of conduit up to six inches. The student is expected to:

(A) describe the process of conduit bending using power tools;

(B) identify all parts of popular electric and hydraulic benders;

(C) avoid excessive waste when working with conduit systems;

(D) bend offsets, kicks, saddles, and segmented and parallel bends;

(E) explain the requirements for the National Electrical Code for bending conduit;

(F) compute the radius, degrees in bend, developed length, and gain for conduit up to six inches; and

(G) explain how to correct damaged conduit and modify existing bends.

(5) The student learns to select and size outlet boxes, pull boxes, and junction boxes. The student is expected to:

(A) describe the different types of nonmetallic and metallic boxes;

(B) calculate the required box size for any number and size of conductors;

(C) explain the National Electrical Code regulations for volume required per conductor in outlet boxes;

(D) locate, install, and support boxes of all types;

(E) describe the National Electrical Code regulations governing pull and junction boxes;

(F) explain the radius rule when installing conductors in pull boxes;

(G) understand the National Electrical Code requirements for boxes supporting lighting fixtures;

(H) describe the purpose of conduit bodies and Type FS boxes;

(I) install the different types of fittings used in conjunction with boxes;

(J) describe the installation rules for boxes and fittings in hazardous areas;

(K) explain how boxes and fittings are selected and installed; and

(L) describe the various types of box supports.

(6) The student knows transportation, storage, and setup of cable reels, methods of rigging, and procedures to complete cable pulls in raceways and cable trays. The student is expected to:

(A) describe the various methods of installing conductors in conduit;

(B) plan and set up for a cable pull;

(C) describe how cable reels are transported to the pulling site;

(D) set up reel stands and spindles for a wire-pulling installation;

(E) explain how mandrels, swabs, and brushes are used to prepare conduit for conductors;

(F) install a pull line for a cable-pulling operation;

(G) explain the operation of power fish tape systems;

(H) prepare the ends of conductors for pulling;

(I) describe the types of cable pullers;

(J) describe the process of high-force cable pulling;

(K) explain how to support conductors in vertical conduit runs;

(L) describe the installation of cables in cable trays;

(M) explain the importance of communication during a cable-pulling operation; and

(N) calculate the probable stress or tension in cable pulls.

(7) The student installs cable trays and modifies cable trays and cable. The student is expected to:

(A) describe the components that make up a cable tray assembly;

(B) explain the methods used to hang and secure a cable tray;

(C) describe how cable enters and exits cable trays;

(D) select the proper cable tray fitting for the situation;

(E) explain the National Electrical Manufacturers Association standards for cable tray installations;

(F) explain the National Electrical Code requirements for cable tray installations;

(G) select the required fittings to ensure equipment grounding continuity in cable tray systems;

(H) interpret electrical working drawings showing cable tray fittings;

(I) size a cable tray for the number and type of conductors contained in the system;

(J) select rollers and sheaves for pulling cable in specific cable tray situations; and

(K) designate the required locations of rollers and sheaves for a specific cable pull.

(8) The student knows the methods of terminating and splicing conductors of all types and sizes and the preparation and taping of conductors. The student is expected to:

(A) describe how to make a good conductor termination;

(B) prepare cable ends for terminations and splices;

(C) install lugs and connectors onto conductors;

(D) train cable at termination points;

(E) explain the role of the National Electrical Code in making cable terminations and splices;

(F) explain why mechanical stress should be avoided at cable termination points;

(G) describe the importance of using proper bolt torque when bolting lugs onto bus bars;

(H) describe crimping techniques;

(I) select the proper lug or connector for the job;

(J) describe splicing techniques; and

(K) explain how to use hand and power crimping tools.

(9) The student installs single- and three-phase services, including metering equipment. The student is expected to:

(A) describe various types of electric services for commercial and industrial installations;

(B) read electrical drawings and diagrams describing service installation;

(C) calculate and select service-entrance equipment;

(D) explain the role of the National Electrical Code in service installations;

(E) install main disconnect switches, panel boards, and overcurrent protection devices;

(F) identify the circuit loads, number of circuits required, and installation requirements for distribution panels;

(G) explain the types and purposes of service grounding;

(H) explain the purpose and required locations of ground fault circuit interrupters;

(I) describe single-phase service connections; and

(J) describe both wye-phase and delta-connected three-phase services.

(10) The student knows the practical application of fuses and circuit breakers. The student is expected to:

(A) explain the necessity of overcurrent protection devices in electrical circuits;

(B) define the terms associated with fuses and circuit breakers;

(C) describe the operation of a circuit breaker;

(D) select the most suitable overcurrent device for the application;

(E) describe the operation of single-element and time-delay fuses;

(F) explain how ground fault circuit interrupters can save lives;

(G) calculate short circuit currents; and

(H) describe troubleshooting and maintenance techniques for overcurrent devices.

(11) The student knows the practical applications of contactors and relays. The student is expected to:

(A) describe the operating principles of contactors and relays;

(B) select contactors and relays for use in specific electrical systems;

(C) explain how mechanical contactors operate;

(D) explain how solid-state contactors operate;

(E) install contactors and relays according to National Electrical Code requirements;

(F) select and install contactors and relays for lighting control;

(G) describe how overload relays operate;

(H) connect a simple control circuit; and

(I) test control circuits.

(12) The student learns the basic principles of human vision and the characteristics of light. The student is expected to:

(A) explain how the human eye works;

(B) describe the characteristics of light;

(C) recognize the different kinds of lamps and explain the advantages and disadvantages of each type, including incandescent, halogen, fluorescent, and high-intensity discharge;

(D) select and install lamps into lighting fixtures; and

(E) recognize and install various types of lighting fixtures, including surface mounted, recessed, suspended, and track-mounted units.

§127.111. Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture, Principles of Construction, or Construction Technology I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I, students will gain knowledge and skills needed to enter the industry as technicians in the HVAC and refrigeration industry or building maintenance industry, prepare for a postsecondary degree in a specified field of construction management, or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, principles of HVAC theory, use of tools, codes, and installation of HVAC and refrigeration equipment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student learns the basic principles of HVAC and refrigeration. The student is expected to:

(A) explain the basic principles of HVAC;

(B) describe what the Clean Air Act means to the HVAC and refrigeration industry; and

(C) identify the types of schedules and drawings used by the HVAC and refrigeration industry.

(2) The student applies knowledge and skills in mathematics as they relate to HVAC and the principles of refrigeration. The student is expected to:

(A) identify similar units of measurement in both English and the International System (SI) of units;

(B) calculate and convert measured values and volumes expressed in mathematical equations and formulas; and

(C) convert temperature values between Celsius and Fahrenheit.

(3) The student selects, prepares, connects, and installs copper and plastic piping and fittings. The student is expected to:

(A) state the precautions that must be taken when installing refrigerant piping;

(B) select, cut, and bend the right copper tubing for the job;

(C) safely connect tubing, using flare and compression fittings;

(D) determine the correct hardware and supports needed for refrigerant pipe installations;

(E) describe the basic requirements needed to identify and install various types of plastic pipe and state their uses;

(F) demonstrate various methods used to pressure test HVAC systems;

(G) identify types of plastic pipe and state their uses; and

(H) cut and join lengths of plastic pipe.

(4) The student cuts, threads, and joins ferrous piping. The student is expected to:

(A) assemble and operate the tools used for soldering;

(B) prepare tubing and fittings for soldering;

(C) identify the purposes and uses of solder and solder fluxes;

(D) solder copper tubing fittings;

(E) assemble and operate the tools used for brazing;

(F) prepare tubing and fittings for brazing;

(G) identify the purposes and uses of filler metals and fluxes used for brazing;

(H) braze copper tubing and fittings;

(I) identify the inert gases that can be used safely to purge tubing when brazing;

(J) identify the types of ferrous metal pipes;

(K) accurately measure the sizes of ferrous metal pipes;

(L) identify the common malleable iron fittings;

(M) cut, ream, and thread ferrous metal pipe;

(N) join lengths of threaded pipe together and install fittings;

(O) describe the main points to consider when installing pipe runs; and

(P) describe the methods used to join grooved piping.

(5) The student knows electrical principles, power generation and distribution, electrical components, direct current circuits, and electrical safety. The student is expected to:

(A) explain how electrical power is distributed;

(B) describe how voltage, current, resistance, and power are related;

(C) calculate the current, voltage, and resistance in a circuit using Ohm's law;

(D) calculate how much power is consumed by a circuit using the power formula;

(E) describe the differences between series and parallel circuits and calculate loads in each;

(F) describe the purpose and operation of the various electrical components used in HVAC equipment;

(G) state and demonstrate the safety precautions that must be followed when working on electrical equipment;

(H) make voltage, current, and resistance measurements using electrical test equipment; and

(I) read and interpret common electrical symbols.

(6) The student learns the principles of heat transfer, refrigeration, pressure temperature relationships, and the components and accessories used in air conditioning systems. The student is expected to:

(A) explain how heat transfer occurs in a cooling system, demonstrating an understanding of the terms and concepts used in the refrigeration cycle;

(B) calculate the temperature and pressure relationships at key points in the refrigeration cycle;

(C) under supervision, use temperature- and pressure-measuring instruments to make readings at key points in the refrigeration cycle;

(D) identify commonly used refrigerants and demonstrate the procedures for handling these refrigerants;

(E) identify the major components of a cooling system and explain how each type works;

(F) identify the major accessories available for cooling systems and explain how each works;

(G) identify the control devices used in cooling systems and explain how each works; and

(H) demonstrate the correct methods to be used when piping a refrigeration system.

(7) The student learns heating fundamentals, types and designs of furnaces and their components, and basic procedures for installing and servicing furnaces. The student is expected to:

(A) explain the three methods by which heat is transferred and give an example of each;

(B) describe how combustion occurs and identify the by-products of combustion;

(C) identify the various types of fuels used in heating;

(D) identify the major components and accessories of an induced draft and condensing gas furnace and explain the function of each component;

(E) describe the factors that must be considered when installing a furnace;

(F) identify the major components of a gas furnace and describe how each works;

(G) use a manometer under supervision to measure and adjust manifold pressure on a gas furnace;

(H) identify the major components of an oil furnace and describe how each component works; and

(I) perform furnace preventive maintenance procedures such as cleaning and filter replacement under supervision.

(8) The student gains knowledge and skills related to air distribution systems. The student is expected to:

(A) describe the airflow and pressures in a basic forced-air distribution system;

(B) explain the differences between propeller and centrifugal fans and blowers;

(C) identify the various types of duct systems and explain why and where each type is used;

(D) demonstrate or explain the installation of metal, fiberboard, and flexible duct;

(E) demonstrate or explain the installation of fittings and transitions used in duct systems;

(F) demonstrate or explain the use and installation of diffusers, registers, and grilles used in duct systems;

(G) demonstrate or explain the use and installation of dampers used in duct systems;

(H) demonstrate or explain the use and installation of insulation and vapor barriers used in duct systems;

(I) identify the instruments used to make measurements in air systems and explain the use of each instrument; and

(J) make accurate temperature, air pressure, and velocity measurements in an air distribution system.

§127.112. Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology I. Recommended prerequisite: Principles of Architecture or Principles of Construction. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II, students will gain advanced knowledge and skills needed to enter the industry as HVAC and refrigeration technicians or building maintenance technicians or supervisors, prepare for a postsecondary degree in a specified field of construction or construction management, or pursue an approved apprenticeship program. Students will acquire knowledge and skills in safety, electrical theory, use of tools, codes, installation of commercial HVAC equipment, heat pumps, troubleshooting techniques, various duct systems, and maintenance practices.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student learns the principles of commercial air systems. The student is expected to:

(A) identify the differences between types of commercial air systems;

(B) identify the type of building in which a particular type of system is used; and

(C) explain the typical range of capacities for a commercial air system.

(2) The student knows the principles of venting fossil-fuel furnaces and the proper methods for selecting and installing vent systems for gas-fired heating equipment. The student is expected to:

(A) describe the principles of combustion and explain complete and incomplete combustion;

(B) describe the content of flue gas and explain how it is vented;

(C) identify the components of a furnace vent system;

(D) describe how to select and install a vent system;

(E) perform the adjustments necessary to achieve proper combustion in a gas furnace;

(F) describe the techniques for venting different types of furnaces;

(G) explain the various draft control devices used with natural-draft furnaces;

(H) calculate the size of a vent required for a given application; and

(I) adjust a thermostat heat anticipator.

(3) The student gains knowledge of hot water heating systems, focusing on safe operation of the low-pressure boiler and piping systems commonly used in residential applications. The student is expected to:

(A) explain the terms and concepts used when working with hot-water heating;

(B) identify the major components of hot-water heating;

(C) explain the purpose of each component of hot-water heating;

(D) demonstrate the safety precautions used when working with hot-water systems;

(E) demonstrate how to operate selected hot-water systems;

(F) demonstrate how to safely perform selected operating procedures on low-pressure systems;

(G) identify the common piping configurations used with hot-water heating;

(H) explain how to read the pressure across a water system circulating pump;

(I) calculate heating water flow rates; and

(J) select a pump for a given application.

(4) The student learns the basic principles, processes, and devices used to control humidity and air clean-lines as well as devices used to conserve energy in HVAC systems. The student is expected to:

(A) explain why it is important to control humidity in a building;

(B) recognize the various kinds of humidifiers used with HVAC systems and explain why each is used;

(C) demonstrate how to install and service the humidifiers used in HVAC systems;

(D) recognize the kinds of air filters used with HVAC systems and explain why each is used;

(E) demonstrate how to install and service the filters used in HVAC systems;

(F) use a manometer or differential pressure gauge to measure the friction loss of an air filter;

(G) identify accessories commonly used with air conditioning systems to improve indoor air quality and reduce energy cost and explain the function of each, including humidity control devices, air filtration devices, and energy conservation devices; and

(H) demonstrate or describe how to clean an electronic air cleaner.

(5) The student gains the knowledge and skills in the handling of refrigerant and equipment servicing procedures to service HVAC systems in an environmentally safe manner. The student is expected to:

(A) identify the common types of leak detectors and explain how each is used;

(B) perform leak detection tests using selected methods;

(C) identify the service equipment used for evacuating a system and explain why each item of equipment is used;

(D) perform system evacuation and dehydration;

(E) identify the service equipment used for recovering refrigerant from a system and for recycling the recovered refrigerant and explain why each item of equipment is used;

(F) perform a refrigerant recovery;

(G) evacuate a system to a deep vacuum;

(H) identify the service equipment used for charging refrigerant into a system and explain why each item of equipment is used;

(I) use nitrogen to purge a system; and

(J) charge refrigerant into a system using various methods, including weight, superheat, sub-cooling, and charging pressure chart.

(6) The student gains knowledge of transformers, single-phase and three-phase power distribution, capacitors, theory and operation of induction motors, and instruments and techniques used in testing alternating current circuits and components. The student is expected to:

(A) describe the operation of various types of transformers;

(B) explain how alternating current is developed and draw a sine wave;

(C) identify single-phase and three-phase wiring arrangements;

(D) explain how phase shift occurs in inductors and capacitors;

(E) describe the types of capacitors and their applications;

(F) explain the operation of single-phase and three-phase induction motors;

(G) identify the various types of single-phase motors and their applications;

(H) state and demonstrate the safety precautions that must be followed when working with electrical equipment; and

(I) test alternating current components, including capacitors, transformers, and motors.

(7) The student learns the theory of solid-state electronics as well as the operation, use, and testing of the various electronic components used in HVAC equipment. The student is expected to:

(A) explain the theory of electronics and semiconductors;

(B) explain how various semiconductor devices such as diodes, light emitting diodes, and photo diodes work and how the devices are used in power and control circuits;

(C) identify different types of resistors and explain how their resistance values can be determined;

(D) describe the operation and function of thermistors and cad cells;

(E) test semiconductor components; and

(F) identify the connectors on a personal computer.

(8) The student learns the operation, testing, and adjustment of conventional and electronic thermostats as well as the operation of common electrical, electronic, and pneumatic circuits used to control HVAC systems. The student is expected to:

(A) explain the function of a thermostat in an HVAC system;

(B) describe different types of thermostats and explain how the thermostats are used;

(C) demonstrate the correct installation and adjustment of a thermostat;

(D) explain the principles applicable to all control systems;

(E) identify the various types of electromechanical, electronic, and pneumatic HVAC controls and explain their function and operation;

(F) describe a systematic approach for electrical troubleshooting of HVAC equipment and components;

(G) recognize and use equipment manufacturers' troubleshooting aids to troubleshoot HVAC equipment;

(H) demonstrate how to isolate electrical problems to faulty power distribution, load, or control circuits;

(I) identify the service instruments needed to troubleshoot HVAC electrical equipment;

(J) make electrical troubleshooting checks and measurements on circuits and components common to all HVAC equipment; and

(K) isolate and correct malfunctions in a cooling system control circuit.

(9) The student learns the tools, instruments, and techniques used in troubleshooting gas heating appliances, including how to isolate and correct faults. The student is expected to:

(A) describe the operating sequence for gas heating equipment;

(B) interpret control circuit diagrams for gas heating systems;

(C) describe the operation of various types of burner ignition methods;

(D) identify the tools and instruments used when troubleshooting gas heating systems;

(E) demonstrate using the tools and instruments required for troubleshooting gas heating systems; and

(F) isolate and correct malfunctions in gas heating systems.

(10) The student learns the techniques and equipment used in troubleshooting cooling equipment and analyzing system temperatures and pressures in order to isolate faults. The student is expected to:

(A) describe a systematic approach for troubleshooting cooling systems and components;

(B) isolate problems to electrical and mechanical functions in cooling systems;

(C) recognize and use equipment manufacturers' troubleshooting aids to troubleshoot cooling systems;

(D) identify and use the service instruments needed to troubleshoot cooling systems;

(E) troubleshoot selected problems in cooling equipment; and

(F) state the safety precautions associated with cooling troubleshooting.

(11) The student learns the principles of reverse-cycle heating, the operation of various types of heat pumps, and the mechanisms of heat pump control circuits and learns to install and service heat pumps. The student is expected to:

(A) describe the principles of reverse-cycle heating;

(B) identify heat pumps by type and general classification;

(C) describe various types of geothermal water loops and their application;

(D) list the components of heat pump systems;

(E) describe the role and operation of electric heat in common heat pump systems;

(F) describe common heat pump ratings such as coefficient of performance, heating season performance factor, and seasonal energy efficiency ratio;

(G) demonstrate heat pump installation and service procedures;

(H) identify and install refrigerant circuit accessories commonly associated with heat pumps;

(I) analyze a heat pump control circuit; and

(J) isolate and correct malfunctions in a heat pump.

(12) The student selects the application and installation of various types of fasteners, gaskets, seals, and lubricants as well as the installation and adjustment of different types of belt drives, bearings, and couplings. The student is expected to:

(A) identify, explain, and install threaded and non-threaded fasteners;

(B) identify, remove, and install types of gaskets, packings, and seals;

(C) identify types of lubricants and explain their uses;

(D) use lubrication equipment to lubricate motor bearings;

(E) identify the types of belt drives, explain their uses, and demonstrate procedures used to install or adjust them;

(F) identify and explain types of couplings;

(G) demonstrate procedures used to remove, install, and align couplings;

(H) identify types of bearings and explain their uses;

(I) explain causes of bearing failures;

(J) demonstrate procedures used to remove and install bearings;

(K) perform preventive maintenance inspection and cleaning procedures; and

(L) list ways to develop and maintain good customer relations.

(13) The student demonstrates how to lay out, fabricate, install, and join sheet metal ductwork. The student is expected to:

(A) identify and describe the types of sheet metal;

(B) define properties of steel and aluminum alloys;

(C) describe a layout method and perform proper cutting;

(D) join sheet metal duct sections using proper seams and connectors;

(E) describe proper hanging and support methods for sheet metal ductwork;

(F) describe thermal and acoustic insulation principles;

(G) select, apply, and seal the proper insulation for sheet metal ductwork;

(H) describe guidelines for installing components such as register, diffusers, grilles, dampers, access doors, and zoning accessories; and

(I) install takeoffs and attach flexible duct to a sheet metal duct.

(14) The student gains the knowledge and skills to lay out, fabricate, install, join, attach, and support fiberglass ductwork and fittings. The student is expected to:

(A) identify types of fiberglass duct, including flexible duct;

(B) describe fiberglass duct layout and some basic fabrication methods;

(C) describe the various closure methods for sealing fiberglass duct;

(D) fabricate selected duct modules and fittings using the appropriate tools;

(E) describe hanging and support methods for fiberglass duct;

(F) describe how to repair major and minor damage to fiberglass duct; and

(G) install takeoffs and attach flexible duct to a fiberglass duct.

§127.113. Plumbing Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Architecture, Principles of Construction, or Construction Technology I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Plumbing Technology I, students will gain knowledge and skills needed to enter the industry as a plumbing apprentice, building maintenance technician, or supervisor or prepare for a postsecondary degree in construction management, architecture, or engineering. Students will acquire knowledge and skills in industry workplace basics and employer/customer expectations, including how to use a plumbing code book; how to identify and use power and hand tools; how to be safe on the jobsite and when using hand and power tools; how to apply basic plumbing mathematics and plumbing drawing; and how to identify, fit, and use plastic, copper, cast iron, carbon steel, and corrugated stainless steel pipe. In addition, students will be introduced to gas, drainage, and water supply systems and continue their knowledge of workplace basics and green technologies.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the causes of accidents and their consequences and repercussions in terms of delays, increased expenses, injury, and loss of life. The student is expected to:

(A) describe the common unsafe acts and conditions that cause accidents;

(B) describe how to handle unsafe acts and conditions;

(C) explain the impact and cost of accidents and illnesses;

(D) demonstrate the use and care of appropriate personal protective equipment;

(E) identify job-site hazards specific to plumbers;

(F) demonstrate the proper use of ladders;

(G) explain how to work around a trench;

(H) describe and demonstrate the lockout/tagout process; and

(I) understand the purpose of material safety data sheets (MSDS) and their importance to job-site and personal safety.

(2) The student understands and demonstrates what employer and customer expectations are and is familiar with industry workplace basics and their importance. The student is expected to:

(A) identify job opportunities and their accompanying job duties such as a plumber, building maintenance technician or supervisor, manager, and mechanical engineer;

(B) research careers along with the education, job skills, and experience required to achieve career goals;

(C) identify the industries and associations that make up the modern plumbing profession;

(D) demonstrate how to properly treat company and customer property;

(E) understand the importance of keeping the work area clean and how that applies to job safety; and

(F) understand the importance of using industry standards and techniques for the job.

(3) The student understands and demonstrates what green technology is and how it relates to the plumbing profession and environment. The student is expected to:

(A) identify different green plumbing fixtures;

(B) identify different types of reuse plumbing systems; and

(C) design and demonstrate a particular reuse water plumbing system.

(4) The student selects and safely uses different types of hand and power tools related to a specific task. The student is expected to:

(A) identify the hand and power tools used in the plumbing industry;

(B) demonstrate the proper use of hand and power plumbing tools;

(C) demonstrate the ability to know when and how to select the proper tools for tasks;

(D) demonstrate proper maintenance and care for hand and power tools;

(E) demonstrate how to prepare a surface for tool use;

(F) describe the safety requirements for using plumbing tools; and

(G) identify and demonstrate how to read and use various rulers and measuring tools.

(5) The student applies mathematical concepts to whole numbers, fractions, decimals, and squared numbers and examines how these concepts apply to specific situations. The student is expected to:

(A) add, subtract, multiply, and divide whole numbers, fractions, and decimals;

(B) convert fractions to decimals and decimals to fractions;

(C) demonstrate mathematical competency in the metric system and how the metric system is used in the plumbing industry;

(D) square various numbers and determine the square roots of numbers with and without a calculator;

(E) identify and demonstrate the parts of a plumbing fitting and use common pipe-measuring techniques;

(F) use fitting dimensions tables to determine fitting allowances and thread makeup; and

(G) demonstrate how to measure end-to-end, center-to-center, and end-to-center measurements using fitting allowances and thread makeup.

(6) The student learns the various types of drawings used in the plumbing industry to lay out and install plumbing systems. The student is expected to:

(A) use current architectural technology to identify pictorial, isometric and oblique, schematic, and orthographic drawings and discuss how different views are used to depict information about objects;

(B) identify the basic symbols used in schematic drawings of pipe assemblies;

(C) explain the types of drawings that may be included in a set of plumbing drawings and the relationship among the different drawings;

(D) interpret plumbing-related information from a set of drawings;

(E) demonstrate how to sketch orthographic drawings;

(F) demonstrate the use of an architect's scale to draw lines to scale and to measure lines drawn to scale; and

(G) explain how code requirements apply to certain drawings.

(7) The student learns the types and schedules of plastic pipe and fittings used in plumbing applications, including acrylonitrile butadiene styrene or ABS, polyvinyl chloride or PVC, chlorinated polyvinyl chloride or CPVC, polyethylene or Poly pipe, crosslinked polyethylene or PEX, and polybutylene. The student is expected to:

(A) identify types of materials and schedules of plastic piping;

(B) identify proper and improper applications of plastic piping;

(C) identify types of fittings and valves used with plastic fittings;

(D) identify and determine the kinds of hangers and supports needed for plastic piping;

(E) identify the various techniques used in hanging and supporting plastic piping;

(F) demonstrate how to measure, cut, and join the different types of plastic piping;

(G) explain proper procedures for the handling, storage, and protection of plastic pipes; and

(H) explain how code requirements apply to different types of plastic pipe.

(8) The student understands the applications of copper pipe and fittings, the types of valves that can be used on copper pipe systems, and the methods for cutting, reaming, joining, and installing copper tubing. The student is expected to:

(A) identify the different types of copper tubing;

(B) identify the material properties and storage and handling requirements of copper tubing;

(C) identify the types of fittings and valves used with copper tubing;

(D) identify the various techniques used in hanging and supporting copper tubing;

(E) demonstrate, using industry standards, how to safely solder copper tubing using different heat sources;

(F) demonstrate how to measure, ream, and cut copper piping;

(G) identify the hazards and safety precautions associated with copper piping; and

(H) explain how code requirements apply to copper tubing.

(9) The student measures, cuts, threads, reams, joins, and hangs carbon steel pipe and becomes familiar with labeling and sizing carbon steel pipe. The student is expected to:

(A) recognize proper applications of carbon steel piping;

(B) identify the material properties, storage, and handling requirements of carbon steel piping;

(C) identify the various techniques used in hanging and supporting carbon steel piping;

(D) demonstrate how to measure, cut, ream, thread, and join carbon steel piping; and

(E) explain how code requirements apply to carbon steel pipe.

(10) The student gains knowledge and skills to connect and install corrugated stainless steel tubing in various installation conditions. The student is expected to:

(A) identify the common manufacturers of corrugated stainless steel tubing;

(B) recognize proper and improper applications of corrugated stainless steel tubing;

(C) identify the various techniques used in hanging and supporting corrugated stainless steel tubing;

(D) demonstrate how to measure, cut, and join corrugated stainless steel tubing;

(E) identify the material properties, storage, and handling requirements of corrugated stainless steel tubing; and

(F) explain how code requirements apply to corrugated stainless steel tubing.

(11) The student understands the way drain, waste, and vent systems remove waste safely. The student understands how pipes, drains, traps, and vents work and the different types of materials used for drain waste and vent (DWV) piping. The student is expected to:

(A) explain how waste moves from a fixture through the drain system to the public or private sewer system;

(B) identify the major components of a drainage system and describe their functions;

(C) identify the different types of traps and their components, explain the importance of traps, and identify the ways that traps can lose their seals;

(D) identify the various types of drain, waste, and vent fittings and describe their applications;

(E) identify significant code and health issues, violations, and consequences related to drain, waste, and vent systems;

(F) identify DWV symbols and lines on an isometric drawing and a floor plan;

(G) demonstrate how to draw an isometric DWV system to make a materials list;

(H) recognize and explain the use of different pipe and fitting materials used for DWV piping and how they are assembled; and

(I) understand how code requirements apply to DWV systems.

(12) The student identifies major components of a municipal water system and how water is distributed to residential or commercial houses or buildings. The student is expected to:

(A) describe and explain the earth's water cycle;

(B) describes different water sources;

(C) describe and show how water gets from the water well or water meter to the house or building; and

(D) discuss and explain different types of valves and devices found in a residential or commercial water system.

(13) The student identifies and draws hot and cold water lines on a floor plan using an isometric drawing. The student is expected to:

(A) identify hot and cold water lines and their symbols on a floor plan;

(B) demonstrate how to draw hot and cold water lines on a floor plan using an isometric drawing; and

(C) demonstrate how to properly size a residential hot and cold water system.

(14) The student describes and demonstrates the different types of valves and their uses. The student is expected to:

(A) explain why and where open-close valves are used;

(B) explain why and where flow regulation valves are used;

(C) explain why and where pressure reducing valves are used; and

(D) explain why and where pressure and vacuum relief valves are used.

§127.114. Plumbing Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Plumbing Technology I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Plumbing Technology II, students will gain the advanced knowledge and skills needed to enter the industry as a plumber, building maintenance technician, or supervisor or prepare for a postsecondary degree in mechanical engineering. Students will acquire knowledge and skills in plumbing codes, industry workplace basics, and employer/customer expectations, including tool and jobsite safety, advanced plumbing mathematics, commercial drawings, basic elec-

tricity, hanger installation, supports and structural penetrations, roof drains, fixture installation, valves and faucets, and oxy-fuel safety. Students will also learn about setup, cutting, brazing and welding water system sizing; gas, drain, waste and vent installation and testing; and water heater installation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies and demonstrates the use of hand and power tools such as pipe wrenches; rulers; measuring devices; drill bits; pipe stands; pipe vises; levels; pipe fabrication tools; and pipe cutting, threading, and reaming tools. The student is expected to:

(A) demonstrate how to measure with a 6-foot folding rule and 25-foot measuring tape;

(B) read and use rulers and measuring devices;

(C) demonstrate how to measure end-to-end, center-to-center, and end-to-center pipe measurements; and

(D) identify and safely demonstrate the use of selected hand and power tools.

(2) The student understands different types of drill bits used in the plumbing profession. The student is expected to:

(A) explain the differences among and applications for masonry, twist steel, hole saw, paddle, and self-feeding wood bits; and

(B) demonstrate the use and application of masonry, twist steel, hole saw, paddle, and self- feeding wood bits.

(3) The student applies algebra and geometry to solve plumbing-related problems. The student is expected to:

(A) demonstrate how to determine the volume of a cylinder;

(B) demonstrate how to determine volume and length measurements using cubic feet and yards;

(C) demonstrate how to determine fall and grades of a pipe;

(D) demonstrate how to calculate simple and rolling offsets on parallel runs using constants;

(E) demonstrate how to calculate pressure, velocity, friction, and flow; and

(F) size a water system based on velocity limitations and pressure drop.

(4) The student reviews employer and customer expectations. The student is expected to:

(A) identify job opportunities such as a plumber, building maintenance technician or supervisor, manager, and mechanical engineer and their accompanying job duties;

(B) research careers along with the education, job skills, and experience required to achieve career goals;

(C) identify the industries and associations that make up the modern plumbing profession;

(D) demonstrate an understanding of how to properly treat company and customer property;

(E) demonstrate an understanding of the importance of keeping the work area clean and how that applies to job safety; and

(F) demonstrate an understanding of the importance of using proper methods and techniques for the job being performed.

(5) The student understands and applies electrical testing equipment. The student is expected to:

(A) apply the use of a volt/ohm meter to different kinds of plumbing equipment;

(B) install hangers and supports and make penetrations according to plumbing code;

(C) demonstrate an understanding of how to choose the right hanger for the application;

(D) choose and build pipe supports;

(E) demonstrate an understanding of code standards on structural penetrations; and

(F) size and install roof drains according to plumbing code.

(6) The student understands and applies how to install plumbing fixtures according to plumbing code. The student is expected to:

(A) demonstrate how to install a toilet; and

(B) demonstrate how to install sinks and different faucets.

(7) The student learns plot plans, structural design, shop drawings, elevation drawings, as-built drawings, equipment arrangement drawings, pipe and instrumentation drawings, isometric drawings, and detail drawings. The student is expected to:

(A) identify types of drawings;

(B) identify and use drawing symbols associated with piping plans and details;

(C) create field sketches; and

(D) interpret drawing indexes and line lists.

(8) The student installs, stores, and handles various types of valves. The student is expected to:

(A) identify types of valves that start and stop flow;

(B) identify types of valves that regulate flow;

(C) identify valves that relieve pressure;

(D) identify valves that regulate the direction of flow;

(E) identify types of valve actuators;

(F) explain how to properly store and handle valves;

(G) explain valve locations and positions;

(H) explain the factors that influence valve selection; and

(I) interpret valve markings and nameplate information.

(9) The student understands and applies how to braze weld and cut with oxy-fuel torch. The student is expected to:

(A) demonstrate an understanding of different parts of oxy-fuel equipment;

(B) identify and implement the proper procedure for attaching and adjusting oxy fuel pressure regulators, gauges, hoses, and torches to oxy fuel bottles;

(C) identify and apply fillers and fluxes for soldering and brazing; and

(D) demonstrate an understanding of safety and safety equipment used with oxy-fuel equipment.

(10) The student understands and applies how to size, install, and test a residential water piping system according to plumbing code. The student is expected to:

(A) identify what factors are critical for sizing a water system such as water pressure, velocity, friction, and flow;

(B) identify what fixture units are and how they apply to sizing a water system;

(C) install a water piping system; and

(D) test a water piping system.

(11) The student understands what cross connections are and their degree of hazard and how to protect against them. The student is expected to:

(A) identify different types of backflow such as gravity, back-pressure, and back siphonage;

(B) demonstrate an understanding of degree of hazard such as toxic, nontoxic, polluted, and contaminated; and

(C) demonstrate an understanding of cross connection protection such as air gap, reduced pressure zone backflow preventer, double check valve assembly, pressure type vacuum breaker, and atmospheric type vacuum breaker.

(12) The student understands and applies how to size, install, and test a natural gas system according to plumbing code. The student is expected to:

(A) identify the factors involved in sizing a natural gas system; and

(B) size, install, and test a natural gas system using carbon steel pipe and corrugated stainless steel tubing.

(13) The student understands how to size, install, and test a drain waste and vent (DWV) system according to plumbing code. The student is expected to:

(A) identify different types of DWV fittings and their use;

(B) size a DWV system;

(C) identify and apply different materials used for a DWV system;

(D) determine slope of a pipe using formulas;

(E) demonstrate an understanding of how to test a DWV system; and

(F) demonstrate an understanding of the different parts and their purpose of a DWV system such as stacks, vents, traps, building drain, and building sewer.

(14) The student understands different types of water heaters, water heaters parts, and their proper installation according to plumbing code. The student is expected to:

(A) demonstrate an understanding of storage tank (electric and gas), point of use, on demand (electric and gas), and solar water heaters;

(B) demonstrate an understanding of parts of the different heaters; and

(C) demonstrate an understanding of the installation of a gas and electric water heater.

§127.145. Practicum in Construction Management (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Construction Management II. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Practicum in Construction Management is an occupationally specific course designed to provide classroom technical instruction or on-the-job training experiences. Safety and career opportunities are included in addition to work ethics and job-related study in the classroom.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a management plan for a project or an activity. The student is expected to:

(A) identify and describe the steps required to complete a project using project management processes, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) determine and acquire the resources needed to complete a project; and

(C) develop a project schedule.

(2) The student applies the appropriate codes, laws, standards, or regulations related to a research and development project. The student is expected to:

(A) identify areas where codes, laws, standards, or regulations may be required;

(B) locate the appropriate codes, laws, standards, or regulations; and

(C) interpret the appropriate codes, laws, standards, or regulations.

(3) The student describes the intended and unintended effects of construction management solutions. The student is expected to:

(A) use an assessment strategy to determine the risks and benefits of a research project; and

(B) describe how construction management has affected individuals, societies, cultures, economies, and environments.

(4) The student solves problems, thinks critically, and makes decisions related to research, design, and development. The student is expected to:

(A) develop or improve a product by following a problem-solving strategy;

(B) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and

(C) apply decision-making techniques to the selection of technological solutions.

(5) The student describes the costs associated with research and development activities. The student is expected to:

(A) develop a budget for a research and development project; and

(B) determine the most effective way to minimize project costs.

(6) The student applies knowledge and skills in communication, mathematics, and science to construction management activities. The student is expected to:

(A) write technical reports;

(B) deliver technical presentations to groups of individuals;

(C) apply the mathematical concepts used in projects; and

(D) apply the science concepts used in projects.

(7) The student predicts the marketability of a project, product, or service. The student is expected to:

(A) determine the customer's expectations concerning a project, product, or service;

(B) evaluate a project, product, or service to determine if it will meet the customer's expectations; and

(C) assess customer responses.

(8) The student uses advanced tools, materials, processes, and procedures in construction management. The student is expected to:

(A) determine and use the appropriate technology needed to solve a problem or complete a task;

(B) evaluate the use of technology in a given situation; and

(C) describe the factors that influence the use of technology in a variety of situations.

(9) The student designs a project using appropriate design processes and techniques. The student is expected to:

(A) design an object or a service using an accepted design process;

(B) develop drawings, illustrations, or models; and

(C) establish design criteria and constraints.

(10) The student predicts the impacts of emerging applications of construction technology. The student is expected to:

(A) describe the emerging technologies in a field; and

(B) identify the factors that may influence the adoption of emerging technologies.

(11) The student improves the quality of a product or service using different quality-control techniques. The student is expected to:

(A) define quality;

(B) assess the quality of a specific product or service; and

(C) determine how the quality of a product or service can be improved.

(12) The student recommends new ways to build products using different tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) build products in a more efficient manner using a variety of tools, equipment, machines, materials, and processes; and

(B) demonstrate advanced construction-management skills.

(13) The student proposes safety devices required to complete different tasks. The student is expected to:

(A) recommend improvements to safety standards; and

(B) specify safety devices that allow for the safe completion of a task.

(14) The student performs advanced equipment maintenance. The student is expected to:

(A) maintain tools and materials correctly;

(B) locate and perform manufacturers' maintenance procedures on selected tools, equipment, and machines; and

(C) describe the results of negligent or improper maintenance.

(15) The student suggests how the cost of a project, product, or service can be reduced. The student is expected to:

(A) identify the factors that influence the cost of a project, product, or service; and

(B) select materials or processes that will reduce the cost of producing the product or delivering the service.

(16) The student applies knowledge and skills in mathematics, science, English language arts, and social studies as they relate to construction management. The student is expected to:

(A) develop a school-based learning activity that provides an in-depth study of at least one aspect of construction management;

(B) establish at least one industry-related mentor for the school-based learning activity;

(C) present the product in at least two formats to a panel of students, teachers, and practitioners in construction management; and

(D) deliver a final product that demonstrates the use of a variety of resources, technologies, and communication skills.

(17) The student determines employment opportunities and preparation requirements for careers in the construction-management industries. The student is expected to:

(A) determine preparation requirements for various levels of employment in a variety of careers in construction management;

(B) analyze the future employment outlook of construction management;

(C) describe entrepreneurial opportunities in construction management;

(D) determine how interests, abilities, personal priorities, and family responsibilities affect career choice;

(E) compare rewards and demands for various levels of employment in a variety of careers; and

(F) determine continuing education opportunities that enhance career advancement.

(18) The student demonstrates ethical and legal practices for careers in construction management. The student is expected to:

(A) summarize the rights and responsibilities of employers and employees;

(B) exhibit ethical practices as defined in construction management; and

(C) analyze legal aspects of construction management.

(19) The student selects the appropriate technological resources to conduct research, design, and development activities. The student is expected to:

(A) apply technology to individual or community problems;

(B) describe the factors that affect the purchase and use of items;

(C) differentiate among research, design, and development; and

(D) distinguish among adaptation, imitation, innovation, and invention.

(20) The student designs or improves a product using appropriate design processes and techniques. The student is expected to:

(A) develop or improve a product or service that meets a specified need;

(B) identify how quality, reliability, and safety can be designed into a product;

(C) describe the functions and methodologies used in basic and applied research; and

(D) develop a project portfolio that documents a research and development project.

§127.146. Extended Practicum in Construction Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture and Construction Career Cluster. Prerequisite: Construction Management II. Corequisite: Practicum in Construction Management. This course must be taken concurrently with Practicum in Construction Management and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Extended Practicum in Construction Management is an occupationally specific course designed to provide classroom technical instruction or on-the-job training experiences. Safety and career opportunities are included in addition to work ethics and job-related study in the classroom.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) apply appropriate content knowledge, technical concepts, and vocabulary when analyzing information and following directions;

(B) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(C) analyze, interpret, and effectively communicate information, data, and observations;

(D) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(E) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions; and

(B) analyze elements of a problem to develop creative and innovative solutions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations;

(B) demonstrate safe operation of tools and equipment;

(C) describe and perform hazard analysis;

(D) specify safety devices that allow for the safe completion of a task; and

(E) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in construction management. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions;

(C) exhibit ethical practices as defined in construction management; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a construction management experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised construction management experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate advanced construction-management skills by building products in a more efficient manner using a variety of tools, equipment, machines, materials, and processes;

(D) design or improve a product using appropriate design processes and techniques;

(E) maintain tools and materials correctly;

(F) design an object or a service using an accepted design process;

(G) demonstrate growth of technical skill competencies;

(H) evaluate strengths and weaknesses in technical skill proficiency; and

(I) collect representative work samples.

§127.147. Practicum in Construction Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Construction Technology II, Building Maintenance Technology II; Electrical Technology II; Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II; Plumbing Technology I; or Mill and Cabinetmaking Technology. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Practicum in Construction Technology, students will be challenged with the application of knowledge and skills gained in previous construction-related coursework. In many cases students will be allowed to work at a job (paid or unpaid) outside of school or be involved in local projects the school has approved for this class.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a management plan for a project or an activity. The student is expected to:

(A) identify and describe the steps required to complete a project using project management processes, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) determine and acquire the resources needed to complete a project; and

(C) develop a project schedule.

(2) The student applies the appropriate codes, laws, standards, or regulations related to a research and development project. The student is expected to:

(A) identify areas where codes, laws, standards, or regulations may be required;

(B) locate the appropriate codes, laws, standards, or regulations; and

(C) interpret and comply with the appropriate codes, laws, standards, or regulations.

(3) The student describes the expectations for each project using a flowchart. The student is expected to:

(A) use an assessment strategy to determine the task's needs;

(B) describe why each task needs to be in the order it has been assigned;

(C) assess the time frame for each task; and

(D) plot a completed project flowchart expectation.

(4) The student solves problems, thinks critically, and makes decisions related to research, design, and development. The student is expected to:

(A) develop or improve the project by following a problem-solving strategy;

(B) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and

(C) apply decision-making techniques to the selection of technological solutions.

(5) The student describes the costs associated with the project. The student is expected to:

(A) develop a bill of materials list for the complete project;

(B) develop a budget, including a cost list, for the complete project; and

(C) determine the most effective way to minimize project costs.

(6) The student applies communication, mathematics, and science knowledge and skills to the construction activities. The student is expected to:

(A) write technical reports;

(B) deliver technical presentations to the instructor;

(C) identify and describe the mathematical concepts used in projects; and

(D) identify and describe the science concepts used in projects.

(7) The student uses advanced tools, materials, processes, and procedures in the construction project. The student is expected to:

(A) determine and use the appropriate technology needed to solve a problem or complete a task;

(B) evaluate the use of technology in a given situation; and

(C) describe the factors that influence the use of technology in a variety of situations.

§127.148. Extended Practicum in Construction Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture and Construction Career Cluster. Prerequisite: Construction Technology II, Building Maintenance Technology II; Electrical Technology II; Heating, Ventilation, and Air Conditioning (HVAC) and Refrigeration Technology II; Plumbing Technology I; or Mill and Cabinetmaking Technology. Corequisite: Practicum in Construction Technology. This course must be taken concurrently with Practicum in Construction Technology and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) In Extended Practicum in Construction Technology, students will be challenged with the application of knowledge and skills gained in previous construction-related coursework. In many cases students will be allowed to work at a job (paid or unpaid) outside of school or be involved in local projects the school has approved for this class.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) apply appropriate content knowledge, technical concepts, and vocabulary with increased fluency when analyzing information and following directions;

(B) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(C) analyze, interpret, and effectively communicate information, data, and observations;

(D) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(E) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) develop or improve a project by following a problem-solving strategy;

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in construction technology. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a construction technology experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised construction technology experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) develop a management plan for a project or an activity;

(D) apply the appropriate codes, laws, standards, or regulations related to a research and development project;

(E) develop a flowchart to plan a project;

(F) determine and use the appropriate technology to solve a problem or complete a task;

(G) demonstrate growth of technical skill competencies;

(H) evaluate strengths and weaknesses in technical skill proficiency; and

(I) collect representative work samples.

§127.149. Practicum in Masonry Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Masonry Technology II. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Practicum in Masonry Technology is an occupationally specific course designed to provide classroom technical instruction or work-based learning experiences. Instruction may be delivered through laboratory training or through career preparation delivery arrangements. Safety and career opportunities are included, in addition to work ethics and job-related study in the classroom. Trade and industrial education provides the knowledge, skills, and technologies required for employment in masonry construction. Students will develop knowledge of the concepts and skills related to this trade in order to apply them to personal/career development. Trade and industrial education depends on and supports integration of academic, career, and technical knowledge and skills. To prepare for success, students must have opportunities to reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. For safety and liability considerations, including power tools usage during training, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates trowel proficiency. The student is expected to:

(A) demonstrate proficiency spreading mortar;

(B) demonstrate proficiency spreading mortar at various heights;

(C) demonstrate proficiency spreading mortar on different types and sizes of brick;

(D) demonstrate proficiency spreading mortar on different types and sizes of concrete masonry units (CMU); and

(E) demonstrate proficiency buttering masonry units laid in different positions in a masonry wall.

(2) The student constructs single wythe brick walls with level. The student is expected to:

(A) build a brick lead with a level;

(B) build a brick wall with a level;

(C) build an outside corner with a level;

(D) build an inside corner with a level; and

(E) build a double wythe brick wall with a level.

(3) The student constructs a brick wall demonstrating different brick positions in a wall. The student is expected to:

(A) lay a stretcher in a masonry wall;

(B) lay a header in a masonry wall;

(C) lay a rowlock in a masonry wall;

(D) lay a sailor in a masonry wall;

(E) lay a soldier in a masonry wall; and

(F) lay a shiner (rowlock stretcher) in a masonry wall.

(4) The student builds a brick column. The student is expected to:

(A) construct a four-brick column with a level;

(B) construct a six-brick column with a level;

(C) construct an eight-brick column with a level; and

(D) construct a ten-brick column with a level.

(5) The student lays CMU. The student is expected to:

(A) build a block CMU lead with a level;

(B) build a block CMU wall with a level; and

(C) build a block CMU corner with a level.

(6) The student builds a block CMU column. The student is expected to:

(A) build a four-block column of 8-inch block CMU;

(B) build a six-block column of 8-inch block CMU;

(C) build a ten-block column of 8-inch block CMU;

(D) build a four-block column of 4-inch CMU; and

(E) build a four-block column of 6-inch CMU.

(7) The student constructs a composite masonry wall of brick and block. The student is expected to:

(A) build a composite wall of brick and 8-inch block CMU; and

(B) build a composite wall of brick and 4-inch block CMU.

(8) The student installs coping on a masonry wall. The student is expected to:

(A) lay single brick rowlock coping on a masonry wall;

(B) lay double brick rowlock coping on a masonry wall;

(C) lay 12-inch bonded brick rowlock coping on a masonry wall;

(D) lay 16-inch bonded brick rowlock coping on a masonry wall;

(E) install limestone coping on a masonry wall;

(F) install cast stone coping on a masonry wall; and

(G) install prefab concrete coping on a masonry wall.

(9) The student constructs a natural stone wall. The student is expected to:

(A) set natural stone in a random pattern in a masonry wall;

(B) set natural stone in an ashlar pattern in a masonry wall; and

(C) install flat work of natural stone in a random pattern.

(10) The student installs manufactured stone. The student is expected to:

(A) install manufactured stone on a wall in a random pattern; and

(B) install manufactured stone on a wall in an ashlar pattern.

(11) The student lays brick to a line. The student is expected to:

(A) lay modular brick to a line;

(B) lay king-size brick to a line;

(C) lay queen-size brick to a line; and

(D) lay utility brick to a line.

(12) The student lays CMU to a line. The student is expected to:

(A) lay 8-inch block CMU to a line;

(B) lay 4-inch block CMU to a line;

(C) lay 6-inch block CMU to a line; and

(D) lay 12-inch block CMU to a line.

§127.150. Extended Practicum in Masonry Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture and Construction Career Cluster. Prerequisite: Masonry Technology II. Corequisite: Practicum in Masonry Technology. This course must be taken concurrently with Practicum in Masonry Technology and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Extended Practicum in Masonry Technology is an occupationally specific course designed to provide classroom technical instruction or work-based learning experiences. Instruction may be delivered through laboratory training or through career preparation delivery arrangements. Safety and career opportunities are included, in addition to work ethics and job-related study in the classroom. Trade and industrial education provides the knowledge, skills, and technolo-

gies required for employment in masonry construction. Students will develop knowledge of the concepts and skills related to this trade in order to apply them to personal/career development. Trade and industrial education depends on and supports integration of academic, career, and technical knowledge and skills. To prepare for success, students must have opportunities to reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. For safety and liability considerations, including power tools usage during training, limiting course enrollment to 15 students is recommended.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(C) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in masonry technology. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a masonry technology experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised masonry technology experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate proficiency spreading mortar;

(D) construct single wythe brick walls with level;

(E) construct a brick wall demonstrating different brick positions in a wall;

(F) build a brick column with advanced proficiency;

(G) lay concrete masonry unit (CMU) with advanced proficiency;

(H) build a block CMU column with advanced proficiency;

(I) construct a composite masonry wall of brick and block;

(J) install coping on a masonry wall with advanced proficiency;

(K) construct a natural stone wall with advanced proficiency;

(L) install manufactured stone with advanced proficiency;

(M) lay brick and CMU to a line with advanced proficiency;

(N) demonstrate growth of technical skill competencies;

(O) evaluate strengths and weaknesses in technical skill proficiency; and

(P) collect representative work samples.

§127.151. Practicum in Architectural Design (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Architectural Design II. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Practicum in Architectural Design is an occupationally specific course designed to provide technical instruction in architectural design. Safety and career opportunities are included in addition to work ethics and architectural design study.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates communication, mathematics, and science to the requirements of the student's chosen field. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures, including fellow workers, managers, and customers;

(B) apply mathematics principles and practices;

(C) apply and identify scientific principles used in projects; and

(D) read and interpret appropriate schematics, charts, graphs, drawings, construction documents, directions, manuals, bulletins, and regulations.

(2) The student knows the function and application of the tools, equipment, technologies, and materials used in the student's chosen field. The student is expected to:

(A) identify and select basic materials and processes used in the student's chosen field;

(B) use the tools and equipment commonly employed in the student's chosen field in a safe manner;

(C) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner; and

(D) demonstrate knowledge of new and emerging technologies in the student's chosen field.

(3) The student selects and uses multimedia communication and rendering technology to meet specific architectural design needs. The student is expected to:

(A) apply multimedia communication and rendering technology to individual or community problems;

(B) describe the factors that affect the use and interpretation of communication products; and

(C) identify and describe the roles of communication such as informing, persuading, and educating.

(4) The student designs multimedia communication and rendering products using appropriate architectural design processes and techniques. The student is expected to:

(A) develop or improve communication products that meet specified needs; and

(B) maintain a project portfolio that documents architectural projects using a variety of multimedia techniques.

(5) The student produces multimedia communication and rendering products using the appropriate tools, equipment, machines, materials, and processes. The student is expected to:

(A) use a variety of tools, equipment, and machines; and

(B) produce an architectural project using multimedia communication techniques.

(6) The student follows appropriate codes, laws, standards, or regulations. The student is expected to:

(A) identify areas where codes, laws, standards, or regulations may be required;

(B) locate the appropriate codes, laws, standards, or regulations; and

(C) comply with the appropriate codes, laws, standards, or regulations.

(7) The student demonstrates the ability to solve problems, think critically, and make decisions. The student is expected to:

(A) develop or improve a product by following a problem-solving strategy;

(B) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and

(C) apply decision-making techniques.

(8) The student applies communication, mathematics, and science knowledge and skills to job-related activities. The student is expected to:

(A) apply written, verbal, and visual communication techniques consistent with industry standards;

(B) use mathematics concepts in communication technology; and

(C) identify and apply scientific principles.

(9) The student determines employment opportunities and preparation requirements for careers in the field of architecture. The student is expected to:

(A) determine preparation requirements for various levels of employment in a variety of careers;

(B) analyze the future employment outlook;

(C) describe entrepreneurial opportunities in architecture and related fields;

(D) determine how interests, abilities, personal priorities, and family responsibilities affect career choice;

(E) compare rewards and demands for various levels of employment in a variety of careers; and

(F) determine continuing education opportunities that enhance career advancement and promote lifelong learning.

(10) The student demonstrates ethical and legal practices for careers in the architectural-related workplace. The student is expected to:

(A) summarize the rights and responsibilities of employers and employees;

(B) exhibit ethical practices as defined by the architectural industry;

(C) analyze legal aspects of the architectural-related workplace;

(D) develop a school-based learning activity in collaboration with the teacher and at least one related mentor that provides an in-depth study of at least one aspect of a selected business, industry, and labor independent study;

(E) present the project in at least two formats such as model, graphic, verbal, or written to a panel of students, teachers, and practitioners in the career concentration;

(F) maintain a project portfolio that documents experience by using graphic or written documentation of architectural-related projects; and

(G) develop and update a professional resume that includes appropriate education history, work history, professional references, letters of recommendation, and all relevant information for any licenses, certifications, and credentials.

§127.152. Extended Practicum in Architectural Design (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Architecture and Construction Career Cluster. Prerequisite: Architectural Design II. Corequisite: Practicum in Architectural Design. This course must be taken concurrently with Practicum in Architectural Design and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Extended Practicum in Architectural Design is an occupationally specific course designed to provide technical instruction in architectural design. Safety and career opportunities are included in addition to work ethics and architectural design study.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations effectively;

(D) analyze, interpret, and effectively communicate information, data, and observations; and

(E) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of problems to develop creative and innovative solutions;

(C) apply decision-making techniques with increased fluency to the selection of technological solutions;

(D) develop or improve a product by following a problem-solving strategy;

(E) apply critical-thinking strategies to the analysis and evaluation of proposed technological solutions; and

(F) conduct technical research to gather information necessary for decision making.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations;

(B) handle and dispose of environmentally hazardous materials used in the student's chosen field in a proper manner; and

(C) demonstrate use of tools and equipment commonly employed in the architectural design field in a safe manner.

(4) The student understands the professional, ethical, and legal responsibilities in architectural design. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions;

(C) exhibit ethical practices as defined by the architectural industry; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised architectural design experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised architectural design experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) read and interpret appropriate schematics, charts, graphs, drawings, construction documents, directions, manuals, bulletins, and regulations;

(D) design multimedia communication and rendering products using appropriate architectural design processes and techniques;

(E) produce multimedia communication and rendering products using the appropriate tools, equipment, machines, and materials;

(F) evaluate strengths and weaknesses in technical skill proficiency; and

(G) collect representative work samples.

§127.153. Practicum in Interior Design (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Interior Design II. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Practicum in Interior Design is an occupationally specific course designed to provide job-specific skills through laboratory training, job shadowing, or work situations in areas compatible with identified career goals in interior design. In addition, students will be expected to develop knowledge and skills related to housing, furnishings, and equipment construction or equipment management and services.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student determines the use of elements and principles of design in residential and nonresidential environments and furnishings. The student is expected to:

(A) differentiate between the elements and principles of design;

(B) exhibit how the elements of design can create various effects;

(C) apply elements and principles of design for coordinating furnishings; and

(D) analyze societal and cultural influences on the design of residential and nonresidential environments and their furnishings.

(2) The student analyzes the workmanship, characteristics, use, and care of materials used in the design and construction of residential and nonresidential furnishings and equipment. The student is expected to:

(A) analyze characteristics of materials and workmanship in relationship to durability and use;

(B) identify characteristics of materials and workmanship in relationship to appearance, performance, use, and care of furnishings;

(C) explain labeling requirements and appropriate procedures for the care of various furnishings;

(D) interpret information provided in equipment use and care manuals; and

(E) demonstrate procedures for the care and maintenance of different types of furnishings and equipment.

(3) The student determines treatments and accessories suitable for residential and nonresidential applications. The student is expected to:

(A) analyze products to determine the appropriate style of design;

(B) determine appropriate use of accessories, lighting, materials, and space in various environments, including environments designed to meet special needs;

(C) describe trends in materials, including eco-friendly and sustainable materials, accessories, lighting, and use of space;

(D) illustrate appropriate window treatments for specific windows;

(E) evaluate cost considerations and budgets in accessorizing for various settings;

(F) describe characteristics, use, and care of wall treatments; and

(G) identify characteristics of types of flooring in relationship to design and construction.

(4) The student assesses factors influencing the selection of furniture and equipment for residential and nonresidential applications. The student is expected to:

(A) describe furniture and equipment used in residential and nonresidential applications;

(B) compare furniture and equipment needs of families in different stages of the life cycle;

(C) evaluate economic considerations when selecting furniture and equipment;

(D) arrange furniture and equipment to accommodate floor plans to meet needs and wants;

(E) describe considerations for selecting furniture and equipment to accommodate persons with special needs; and

(F) research trends and technology related to furnishings and equipment.

(5) The student applies safety and sanitation practices. The student is expected to:

(A) apply safety rules in performing various workplace procedures according to industry standards;

(B) identify potential hazards;

(C) promote prevention practices;

(D) summarize laws pertaining to safety and sanitation practices;

(E) demonstrate appropriate responses to emergency situations; and

(F) determine workplace procedures that protect the environment.

(6) The student determines appropriate use and care of tools and equipment used in construction of furnishings. The student is expected to:

(A) identify tools and equipment used in construction of furnishings;

(B) demonstrate safe and skillful tool care and use; and

(C) describe the impact of technology on tools, equipment, and construction.

(7) The student demonstrates skills in selected product design and construction. The student is expected to:

(A) evaluate characteristics of good workmanship in furnishings products;

(B) apply knowledge of design application, selection, and construction to complete furnishings projects; and

(C) analyze uses of technology in furnishings, design, and construction.

(8) The student identifies types of business promotion practices and their benefit to the housing and furnishings retailer. The student is expected to:

(A) discuss business promotion objectives in the retail housing and furnishings industry;

(B) analyze techniques using sales promotion, advertising, and displays;

(C) describe the use of technology and other forms of advertising media in housing and furnishings business promotions;

(D) analyze how business promotion reflects the environment in which a person lives; and

(E) predict how societal trends and changing demographics influence housing and furnishings business promotions.

(9) The student evaluates customer relations as a tool for successful business operations. The student is expected to:

(A) analyze the importance of good customer relations in building and maintaining a business;

(B) demonstrate techniques for maintaining good client relationships; and

(C) describe conflict-resolution techniques when dealing with customer complaints.

(10) The student exhibits employability skills that lead to job success in the housing, furnishings, and equipment industries. The student is expected to:

(A) demonstrate effective verbal, nonverbal, written, and electronic communication skills;

(B) demonstrate effective methods to secure, maintain, and terminate employment;

(C) demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;

(D) evaluate the relationship of good physical and mental health to job success and achievement;

(E) demonstrate appropriate grooming and appearance for the workplace;

(F) demonstrate appropriate business and personal etiquette in the workplace;

(G) exhibit productive work habits and attitudes; and

(H) maintain a project portfolio that documents interior design projects using a variety of multimedia techniques with a professional resume.

(11) The student determines employment opportunities and preparation requirements for careers in the housing, furnishings, and equipment industries. The student is expected to:

(A) determine preparation requirements for various levels of employment in a variety of careers in the housing, furnishings, and equipment industries;

(B) analyze the future employment outlook in the housing, furnishings, and equipment industries;

(C) describe entrepreneurial opportunities in the housing, furnishings, and equipment industries;

(D) determine how interests, abilities, personal priorities, and family responsibilities affect career choice;

(E) analyze rewards and demands for various levels of employment in a variety of careers; and

(F) research continuing education opportunities that enhance career advancement and promote lifelong learning.

(12) The student demonstrates ethical and legal practices for careers in the housing, furnishings, and equipment industries. The student is expected to:

(A) research and summarize the rights and responsibilities of employers and employees;

(B) exhibit ethical practices as defined by the housing, furnishings, and equipment industries; and

(C) analyze legal aspects of the housing, furnishings, and equipment industries.

§127.154. Extended Practicum in Interior Design (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of

career and technical education courses in the Architecture and Construction Career Cluster. Prerequisite: Interior Design II. Corequisite: Practicum in Interior Design. This course must be taken concurrently with Practicum in Interior Design and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Architecture and Construction Career Cluster focuses on designing, planning, managing, building, and maintaining the built environment.

(3) Extended Practicum in Interior Design is an occupationally specific course designed to provide job-specific skills through laboratory training, job shadowing, or work situations in areas compatible with identified career goals in interior design. In addition, students will be expected to develop knowledge and skills related to housing, furnishings, and equipment construction or equipment management and services.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations effectively;

(D) analyze, interpret, and effectively communicate information, data, and observations; and

(E) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of problems to develop creative and innovative solutions; and

(C) conduct technical research to gather information necessary for decision making.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations;

(B) apply safety rules in performing various workplace procedures according to industry standards; and

(C) demonstrate safe and skillful tool care and use.

(4) The student understands the professional, ethical, and legal responsibilities in interior design. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions;

(C) exhibit ethical practices as defined by the housing, furnishings, and equipment industries and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised interior design experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised interior design experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) apply elements and principles of design for coordinating furnishings with advanced proficiency;

(D) identify characteristics of materials and workmanship in relationship to appearance, performance, use, and care of furnishings;

(E) demonstrate advanced procedures for the care and maintenance of different types of furnishings and equipment;

(F) determine appropriate use of accessories, lighting, materials, and space in various environments;

(G) arrange furniture and equipment to accommodate floor plans to meet needs and wants;

(H) apply knowledge of design application, selection, and construction to complete furnishings projects;

(I) evaluate strengths and weaknesses in technical skill proficiency; and

(J) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER E. ARTS, AUDIO VISUAL TECHNOLOGY, AND COMMUNICATIONS

19 TAC §§127.160 - 127.193, 127.224 - 127.235

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.160. Principles of Arts, Audio/Video Technology, and Communications (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 9. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in the Arts, Audio Visual Technology, and Communications Career Cluster require a creative aptitude, a strong background in computer and technology applications, a strong academic foundation, and a proficiency in oral and written communication. Within this context, students will be expected to develop an understanding of the various and multifaceted career opportunities in this cluster and the knowledge, skills, and educational requirements for those opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies English language arts in Arts, Audio/Video Technology, and Communications projects. The student is expected to:

(A) demonstrate use of content, technical concepts, and vocabulary;

(B) use correct grammar, punctuation, and terminology to write and edit documents;

(C) identify assumptions, purpose, and propaganda techniques;

(D) compose and edit copy for a variety of written documents;

(E) evaluate oral and written information; and

(F) research topics for the preparation of oral and written communication.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) develop and interpret tables, charts, and figures to support written and oral communications;

(G) listen to and speak with diverse individuals; and

(H) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student uses technology applications when completing Arts, Audio/Video Technology, and Communications projects and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for Arts, Audio/Video Technology, and Communications projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands arts, audio/video technology, and communications systems. The student is expected to:

(A) describe the nature and types of businesses in arts, audio/video technology, and communications;

(B) analyze and summarize the history and evolution of the arts, audio/video technology, and communications fields of study;

(C) analyze the arts, audio/video technology, and communications economic base; and

(D) analyze and summarize evidence of interdependence between the technical and the artistic sides of arts, audio/video technology, and communications.

(6) The student understands principles of audio/video production. The student is expected to:

(A) apply knowledge of audio and video script production;

(B) discuss the impact of audio and video selection on human emotion;

(C) demonstrate the use of audio and video for a three-screen environment, including cell phones, television monitors, and computer screens;

(D) demonstrate various videography techniques, including picture composition, video composition, audio composition, editing, and delivery;

(E) understand the differences between linear and non-linear systems; and

(F) demonstrate knowledge of control peripherals for capturing or ingesting media.

(7) The student understands principles of fashion design that impact consumer purchasing of fashion and apparel accessories. The student is expected to:

(A) describe social, cultural, and life cycle influences;

(B) explain how fashion trends are determined; and

(C) analyze the influence of advertising on consumer apparel choices.

(8) The student understands principles of video game design. The student is expected to:

(A) demonstrate knowledge and appropriate use of computer operating systems;

(B) demonstrate appropriate use of hardware components, software programs, and storage devices;

(C) demonstrate knowledge of sound editing;

(D) demonstrate knowledge of file formats and cross-platform compatibility;

(E) acquire and exchange information in a variety of electronic file sharing formats; and

(F) combine graphics, images, and sound.

(9) The student understands principles of graphic design and illustration. The student is expected to:

(A) research the history of visual arts and design;

(B) explain the evolution of art and design;

(C) compare current visual arts technologies with historical technologies;

(D) understand general characteristics in artwork from a variety of cultures; and

(E) analyze and apply art elements and principles in photographic works, multimedia applications, and digital and print media.

(10) The student understands principles of commercial photography. The student is expected to:

(A) demonstrate knowledge of photographic composition and layout; and

(B) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills.

(11) The student understands principles, elements, and techniques of animation. The student is expected to:

(A) describe and use audience identification, script writing, character design, storyboarding, and audio and delivery formats;

(B) describe and use cell, stop motion, tweening, motion paths, masking, looping, scripting/programming, and interactivity;

(C) describe lighting and camera shots; and

(D) describe and use flip books, claymation, or cut-outs;

(12) The student understands principles of printing and imaging. The student is expected to:

(A) identify processes required for the production of various printed products;

(B) identify basic design elements such as text, graphics, and white space; and

(C) demonstrate basic knowledge of color theory.

(13) The student applies safety regulations. The student is expected to:

(A) implement personal and classroom safety rules and regulations; and

(B) follow emergency procedures as needed.

(14) The student identifies and develops leadership characteristics. The student is expected to:

(A) identify leadership characteristics; and

(B) participate in student leadership and professional development activities.

(15) The student applies ethical decision making and understands and complies with laws regarding use of technology in arts, audio/video technology, and communications. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and giving proper credit for ideas;

(B) examine the First Amendment, Federal Communications Commission regulations, Freedom of Information Act, liability laws, and other regulations for compliance issues;

(C) examine the liabilities, copyright laws, fair use, and duplication of materials associated with productions and performances;

(D) analyze the impact of arts, audio/video technology, and communications industries on society;

(E) demonstrate an understanding of proper digital etiquette, personal security guidelines, use of network resources, and the district's acceptable use policy for technology; and

(F) identify and demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, listening attentively to speakers, willingness to learn new knowledge and skills, and pride in quality work.

(16) The student understands communications strategies as they relate to arts, audio/video technology, and communications. The student is expected to:

(A) adapt the language and design of a project for audience, purpose, situation, and intent;

(B) organize oral, written, and graphic information into formal and informal projects;

(C) interpret and communicate information for multiple audiences; and

(D) collaborate to create original projects, including seeking and responding to advice from others such as peers or experts in the creation and evaluation process.

(17) The student uses a variety of strategies to plan, obtain, evaluate, and use valid information. The student is expected to:

(A) obtain print and digital information such as graphics, audio, and video from a variety of resources while citing the sources;

(B) evaluate information for accuracy and validity; and

(C) present accurate information using techniques appropriate for the intended audience.

(18) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(19) The student develops a basic understanding of arts, audio/video technology, and communications. The student is expected to:

(A) research the scope of career opportunities;

(B) develop an understanding of the elements and principles of art;

(C) develop an understanding of the industry by explaining the history and evolution of the arts, audio/video technology, and communications career fields and defining and using related terminology;

(D) evaluate works of art using critical-thinking skills;

(E) determine the use of art elements such as color, texture, form, line, and space; and

(F) determine the use of principles of design such as continuity, pattern, rhythm, balance, proportion, and unity in products.

(20) The student makes informed judgments about product designs and the designs of others. The student is expected to:

(A) interpret, evaluate, and justify artistic decisions; and

(B) select and analyze original product designs by peers and others to form precise conclusions about formal qualities and historical and cultural contexts, intents, and meanings.

§127.161. Animation I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Art I or Principles of Art, Audio/Video Technology, and Communications. Recommended corequisite: Animation I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of motion graphics. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the history and techniques of the animation industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in animation projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and employs problem-solving methods and conflict-management skills. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for animation projects.

(5) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(6) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) demonstrate leadership skills independently and in a group setting;

(B) conduct and participate in groups; and

(C) model mentoring skills.

(7) The student applies ethical decision making and understands and complies with laws regarding use of technology in animation. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and giving proper credit for ideas;

(B) discuss and apply copyright laws;

(C) model respect of intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) analyze the impact of the animation industry on society.

(8) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(9) The student develops an understanding of animation technology. The student is expected to:

(A) demonstrate appropriate use of hardware components, software programs, and storage devices;

(B) demonstrate knowledge of sound editing;

(C) demonstrate knowledge of file formats and cross-platform compatibility; and

(D) acquire and exchange information in a variety of electronic file sharing formats.

(10) The student evaluates visual information. The student is expected to:

(A) recognize the use of principles and elements of design; and

(B) recognize the use of typography.

(11) The student uses an appropriate design process to create and modify solutions to problems. The student is expected to:

(A) combine graphics, images, and sound;

(B) apply principles of design;

(C) develop and reference technical documentation; and

(D) edit products.

(12) The student creates animation projects. The student is expected to:

(A) use a variety of techniques and software programs; and

(B) publish and deliver products using a variety of media.

(13) The student researches the history and evolution of animation. The student is expected to:

(A) explain the history of animation;

(B) describe how changing technology is affecting the industry;

(C) analyze the use of symbols in the animation of diverse cultures;

(D) compare current animation technologies with historical technologies;

(E) compare various styles of animation; and

(F) explore emerging and innovative animation technologies and software.

(14) The student understands and applies animation principles, elements, and techniques. The student is expected to:

(A) describe and use audience identification, script writing, character design, storyboarding, and audio and delivery formats;

(B) describe and use cells, stop motion, tweening, motion paths, masking, looping, scripting/programming, and interactivity;

(C) describe lighting and camera shots;

(D) describe and use flip books, claymation, or cut-outs;

(E) render; and

(F) describe and use postproduction processes such as editing and creating titles, credits, and special effects.

(15) The student presents oral or written evaluations of animation projects. The student is expected to:

(A) identify the intended audience;

(B) describe aesthetics;

(C) explain the storyline;

(D) summarize subject matter; and

(E) discuss the use of sound.

§127.162. Animation I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Art I and Principles of Arts, Audio/Video Technology, and Communications. Corequisite: Animation I. This course must be taken concurrently with Animation I and may not be taken as a stand-alone course. Districts are

encouraged to offer this lab in a consecutive block with Animation I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of motion graphics. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the history and techniques of the animation industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or certification for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable;

(C) demonstrate skills related to seeking and applying for employment;

(D) create a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(E) demonstrate skills in evaluating and comparing employment opportunities; and

(F) examine employment opportunities in entrepreneurship.

(2) The student applies academic knowledge and skills in animation projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, and fractions and knowledge of arithmetic operations.

(3) The student understands professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and employs problem-solving methods and conflict-management skills. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for animation projects.

(6) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) demonstrate leadership skills independently and in a group setting;

(B) conduct and participate in groups; and

(C) model mentoring skills.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in animation. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and giving proper credit for ideas;

(B) discuss and apply copyright laws;

(C) model respect of intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) analyze the impact of the animation industry on society.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student develops an understanding of animation technology. The student is expected to:

(A) demonstrate appropriate use of hardware components, software programs, and storage devices;

(B) demonstrate knowledge of sound editing;

(C) demonstrate knowledge of file formats and cross-platform compatibility; and

(D) acquire and exchange information in a variety of electronic file sharing formats.

(11) The student evaluates visual information. The student is expected to:

(A) recognize the use of principles and elements of design; and

(B) recognize the use of typography.

(12) The student uses an appropriate design process to create and modify solutions to problems. The student is expected to:

(A) combine graphics, images, and sound;

(B) apply principles of design;

(C) develop and reference technical documentation; and

(D) edit products.

(13) The student creates animation projects. The student is expected to:

(A) use a variety of techniques and software programs; and

(B) publish and deliver the product using a variety of media.

(14) The student researches the history and evolution of animation. The student is expected to:

(A) explain the history of animation;

(B) describe how evolving technology is affecting the industry;

(C) analyze the use of symbols in the animation of diverse cultures;

(D) compare current animation technologies with historical technologies;

(E) compare various styles of animation; and

(F) explore emerging and innovative animation technologies and software.

(15) The student understands and applies animation principles, elements, and techniques. The student is expected to:

(A) describe and use audience identification, script writing, character design, storyboarding, and audio and delivery formats;

(B) describe and use cells, stop motion, tweening, motion paths, masking, looping, scripting/programming, and interactivity;

(C) describe lighting and camera shots;

(D) describe and use flip books, claymation, or cut-outs;

(E) render; and

(F) describe and use postproduction processes such as editing and creating titles, credits, and special effects.

(16) The student presents oral or written evaluations of animation projects. The student is expected to:

(A) identify the intended audience;

(B) describe aesthetics;

(C) explain the storyline;

(D) summarize subject matter; and

(E) discuss the use of sound.

§127.163. Animation II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Animation I. Recommended corequisite: Animation II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of motion graphics. Within this context, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to create two- and three-dimensional animations. The instruction also assists students seeking careers in the animation industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in animation projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and employs problem-solving methods and conflict-management skills. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for animation projects.

(5) The student understands animation systems. The student is expected to analyze and summarize the history and evolution of the animation field.

(6) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(C) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(D) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time, producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(E) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and complies with laws regarding use of technology in animation. The student is expected to:

(A) exhibit ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies.

(9) The student applies advanced technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student develops an advanced technical understanding of animation. The student is expected to:

(A) operate communication systems to prepare and conduct verbal and visual communication;

(B) use production elements such as transitions, edits, framing, angle, and lighting techniques;

(C) use orthographic and isometric drawing techniques; and

(D) demonstrate familiarity with commercial production applications.

(11) The student demonstrates animation principles and elements. The student is expected to:

(A) apply animation principles such as arcs, timing, and exaggeration; and

(B) identify animation elements such as cycles, layers, transitions, and transparency.

(12) The student applies the elements and principles of art to animation projects. The student is expected to:

(A) identify animation design elements such as line, color, shape, and texture;

(B) explain the use of additive color theory; and

(C) compare various styles of animation.

(13) The student applies pre-production processes. The student is expected to:

(A) analyze target audience to identify needs and wants;

(B) write and edit scripts;

(C) create storyboards; and

(D) select aspect ratio and frame rate appropriate to delivery method.

(14) The student applies production processes. The student is expected to:

(A) design color and compositional elements;

(B) design characters, environments, and props;

(C) model characters, environments, and props;

(D) light sets or animating lights as needed;

(E) develop rigs for animating characters;

(F) assemble particle systems for visual effects such as rain, snow, and fire;

(G) animate characters, environments, or cameras;

(H) incorporate music and sound effects; and

(I) render scenes.

(15) The student applies post-production processes. The student is expected to:

(A) edit;

(B) produce titles and credits;

(C) add visual effects and processing;

(D) add audio effects and processing; and

(E) produce output.

§127.164. Animation II Lab (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Animation I. Corequisite: Animation II. This course must be taken concurrently with Animation II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Animation II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of motion graphics. Within this context, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to create two- and three-dimensional animations. The instruction also assists students seeking careers in the animation industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in animation projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student demonstrates professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and employs problem-solving methods and conflict-management skills. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for animation projects.

(5) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(6) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time, producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(7) The student applies ethical decision making and complies with laws regarding use of technology in animation. The student is expected to:

(A) exhibit ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies.

(8) The student applies advanced technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(9) The student develops an advanced technical understanding of animation. The student is expected to:

(A) operate communication systems to prepare and conduct verbal and visual communication;

(B) use production elements such as transitions, edits, framing, angle, and lighting techniques;

(C) use orthographic and isometric drawing techniques; and

(D) demonstrate familiarity with commercial production applications.

(10) The student demonstrates animation principles and elements. The student is expected to:

(A) apply animation principles such as arcs, timing, and exaggeration; and

(B) identify animation elements such as cycles, layers, transitions, and transparency.

(11) The student applies the elements and principles of art to animation projects. The student is expected to:

(A) identify animation design elements such as line, color, shape, and texture;

(B) explain the use of additive color theory; and

(C) compare various styles of animation.

(12) The student applies pre-production processes. The student is expected to:

(A) analyze target audience to identify needs and wants;

(B) write and edit scripts;

(C) create storyboards; and

(D) select aspect ratio and frame rate appropriate to delivery method.

(13) The student applies production processes. The student is expected to:

(A) design color and compositional elements;

(B) design characters, environments, and props;

(C) model characters, environments, and props;

(D) light sets or animating lights as needed;

(E) develop rigs for animating characters;

(F) assemble particle systems for visual effects such as rain, snow, and fire;

(G) animate characters, environments, or cameras;

(H) incorporate music and sound effects; and

(I) render scenes.

(14) The student applies post-production processes. The student is expected to:

(A) edit;

(B) produce titles and credits;

(C) add visual effects and processing;

(D) add audio effects and processing; and

(E) produce output.

§127.165. Audio/Video Production I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications. Recommended corequisite: Audio/Video Production I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio and video technology and film production span all aspects of the audio/video communications industry. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on pre-production, production, and post-production audio and video products.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in audio and video projects. The student is expected to:

(A) apply English language arts knowledge and skills by demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, and manuals; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent through structure and style;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student uses technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands the evolution and current trends of the audio and video production industry. The student is expected to:

(A) summarize the history and evolution of the audio and video production industry; and

(B) analyze the current trends of the audio and video production industry.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations;

(B) follow emergency procedures; and

(C) examine and summarize safety-related problems that may result from working on location.

(7) The student develops leadership characteristics. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) participate in meetings; and

(D) participate in mentoring activities.

(8) The student applies ethical decision making and complies with laws regarding use of technology in audio and video production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and acquisition, trademark laws, and personal privacy laws;

(C) model respect for intellectual property;

(D) analyze the ethical impact of the audio and video production industry on society; and

(E) evaluate audio and video products for accuracy and validity.

(9) The student uses innovative thinking to develop new ideas and processes for solving real-world issues and conveying those ideas to a global audience through a digital product. The student is expected to:

(A) examine real-world issues relating to current topics such as health care, government, business, or education; and

(B) create unique methods and products for audiences beyond the classroom such as school officials, non-profit organizations, higher education officials, government, or other stakeholders.

(10) The student develops career-building characteristics. The student is expected to:

(A) create a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities;

(C) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, and industry professional organizations; and

(D) examine employment opportunities in entrepreneurship.

(11) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(12) The student develops a basic understanding of audio and video production. The student is expected to:

(A) understand the audio, video, and film industry, including the history, current practices, and future trends;

(B) explain the beginning and evolution of the audio, video, and film industry;

(C) describe how changing technology is impacting the audio, video, and film industry;

(D) define and use terminology associated with the audio, video, and film industry;

(E) identify various audio tape, tapeless, and file formats and the key elements required in audio scripts;

(F) apply writing skills to develop an audio script;

(G) explain how various styles of music can create a specific emotional impact;

(H) understand various microphones based upon type, pickup patterns, and various audio cables and connectors;

(I) identify the key elements required in video scripts;

(J) apply writing skills to develop a video script;

(K) identify various video tape, tapeless, and file formats;

(L) understand various video cables and connectors;

(M) distinguish between analog and digital formats;

(N) describe various videography techniques, including picture composition, focus, camera and tripod movements, and proper exposure and white balance;

(O) understand the basics of audio and video editing platforms such as differences between linear and nonlinear editing systems; and

(P) describe various digital platforms, including high definition and standard definition.

(13) The student understands the pre-production process. The student is expected to:

(A) design and implement procedures to track trends, set timelines, and evaluate progress for continual improvement in process and product;

(B) respond to advice from peers and professionals;

(C) create technology specifications;

(D) monitor process and product quality using established criteria;

(E) create a script and identify resources needed to begin the production;

(F) identify budgeting considerations for cast, crew, equipment, and location;

(G) analyze the script and storyboard development processes for a successful production;

(H) identify and participate in the team roles required for completion of a production;

(I) identify cast, crew, equipment, and location requirements for a scripted production; and

(J) understand the casting or audition process.

(14) The student understands the post-production process. The student is expected to:

(A) use technology applications to facilitate evaluation of work, both process and product, by evaluating the project's success in meeting established criteria; and

(B) research the best method for promoting the product by identifying and analyzing market research such as market share, audience-measurement ratings, sweeps periods, distribution, product release dates, demographics, target audience, and advertising rates and revenue.

§127.166. Audio/Video Production I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications or Digital Media in the Information Technology Career Cluster. Corequisite: Audio/Video Production I. This course must be taken concurrently with Audio/Video Production I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Audio/Video Production I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio and video technology and film production span all aspects of the audio/video communications industry. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on pre-production, production, and post-production audio and video products. Requiring a lab corequisite for the course affords necessary time devoted specifically to the production and post-production process.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) demonstrate professional standards and personal qualities needed to be employable such as oral and written communication, leadership, teamwork, appreciation for diversity, conflict management, customer service, work ethic, and adaptability;

(C) demonstrate skills related to seeking and applying for employment; and

(D) create a resume and cover letter/letter of interest to document information such as work experiences, licenses, certifications, and work samples.

(2) The student applies academic knowledge and skills in audio and video projects. The student is expected to:

(A) apply English language arts knowledge and skills by demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, and manuals; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(3) The student understands professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations;

(B) follow emergency procedures; and

(C) identify and report safety-related problems that may result from working on location.

(7) The student develops leadership characteristics. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) participate in meetings; and

(D) participate in mentoring activities.

(8) The student applies ethical decision making and complies with laws regarding use of technology in audio and video production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) apply copyright laws in relation to fair use and acquisition, trademark laws, and personal privacy laws; and

(C) model respect for intellectual property.

(9) The student develops career-building characteristics. The student is expected to:

(A) create a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities;

(C) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, industry professional organizations; and

(D) examine employment opportunities in entrepreneurship.

(10) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student develops a basic understanding of audio and video production. The student is expected to:

(A) use terminology associated with the industries;

(B) apply writing skills to develop an audio script;

(C) apply various styles of music as needed to create a specific emotional impact;

(D) use various audio tape, tapeless, and file formats;

(E) use various microphones based upon type and pickup patterns; and

(F) use various audio cables and connectors.

(12) The student employs knowledge regarding use of video. The student is expected to:

(A) apply writing skills to develop a video script;

(B) use various video tape, tapeless, and file formats;

(C) use various video cables and connectors;

(D) demonstrate operation of video cameras; and

(E) demonstrate how to properly maintain video equipment;

(13) The student employs various videography techniques. The student is expected to:

(A) demonstrate how to frame and maintain picture composition;

(B) demonstrate focusing techniques;

(C) demonstrate camera and tripod movements; and

(D) demonstrate proper exposure and white balance.

(14) The student edits basic audio and video productions. The student is expected to:

(A) demonstrate skills required for editing using linear and nonlinear systems; and

(B) employ knowledge of control peripherals for capturing or ingesting media.

(15) The student understands the pre-production process. The student is expected to:

(A) implement procedures to track trends, set timelines, and evaluate progress for continual improvement in process and product;

(B) respond to advice from peers and professionals;

(C) create technology specifications;

(D) monitor process and product quality using established criteria;

(E) create a script and identify resources needed to begin the production;

(F) apply budgeting considerations for cast, crew, equipment, and location;

(G) analyze the script and storyboard for a successful production;

(H) participate in the team roles required for completion of a production; and

(I) employ cast, crew, equipment, and location for a scripted production.

(16) The student understands the production process. The student is expected to:

(A) implement a coherent sequence of events to successfully produce a script;

(B) use lighting techniques, including three-point lighting, reflected light, color temperatures, and lighting filters;

(C) employ audio techniques, including microphone variances and sound mixing; and

(D) demonstrate knowledge of interpersonal skills with sensitivity to diversity when directing crew or talent.

(17) The student understands the post-production process. The student is expected to:

(A) demonstrate knowledge of video systems such as digital and analog systems, software applications, and communication and network components;

(B) make appropriate decisions regarding the selection of software;

(C) make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(D) apply animation effects using character generators, fonts, colors, and principles of composition to create graphic images, captions, or titles for video and graphics;

(E) demonstrate proficiency in the use of a variety of electronic input devices;

(F) use a variety of strategies to acquire information from online resources;

(G) acquire electronic information in a variety of formats;

(H) use different compression standards and techniques to output for distribution;

(I) format digital information for effective communication with a defined audience using appropriate font attributes and color, white space and graphics, and camera perspective;

(J) use appropriate content selection and presentation;

(K) understand target audiences and demographics;

(L) determine appropriate delivery method based on distribution needs;

(M) deliver products in a variety of media by using various delivery formats such as disk, broadcast, cellular, portable device, electronic, and online delivery;

(N) use appropriate computer-based productivity tools to create and modify solutions to problems;

(O) create audio and video technology products for a variety of purposes and audiences;

(P) develop technical documentation related to audio and video technology; and

(Q) demonstrate innovative uses of a wide range of emerging technologies, including online learning, mobile devices, digital content, and Web 2.0 tools such as podcasting, wikis, and blogs.

§127.167. Audio/Video Production II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Audio/Video Production I. Recommended corequisite: Audio/Video Production II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio and video technology and film production span all aspects of the audio/video communications industry. Building upon the concepts taught in Audio/Video Production, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on pre-production, production, and post-production products. This course may be implemented in an audio format or a format with both audio and video.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in production projects. The student is expected to:

(A) apply English language arts knowledge and skills by consistently demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, manuals, proposals, and other client-based documents; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by consistently demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent through structure and style;

(B) analyze and organize oral and written information;

(C) analyze, interpret, and communicate information, data, and observations;

(D) create and deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student uses technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands the evolution and current trends of the audio and video production industry. The student is expected to:

(A) summarize the history and evolution of the audio and video production industry; and

(B) analyze the current trends of the audio and video production industry.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations;

(B) recognize and resolve potential safety concerns; and

(C) follow emergency procedures.

(7) The student applies leadership characteristics to student organizations and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and complies with laws regarding use of technology in audio/video production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) apply copyright laws in relation to fair use and acquisition, trademark laws, and personal privacy laws;

(C) model respect for intellectual property; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies.

(9) The student develops career-building characteristics. The student is expected to:

(A) update a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities;

(C) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, industry professional organizations; and

(D) examine employment opportunities in entrepreneurship.

(10) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student demonstrates knowledge of audio and video production. The student is expected to:

(A) understand set-up, execution, and trouble-shooting of standard systems for the audio/video industry, including editing systems, wireless and wired transmission systems, cabling, and configurations for production purposes;

(B) employ knowledge of recording equipment usage by explaining analog and digital formats;

(C) describe tape and tapeless formats;

(D) demonstrate the operation of recording devices, including metering a recording signal for proper levels and proper maintenance of recording equipment; and

(E) apply appropriate industry-related terminology.

(12) The student understands the pre-production process. The student is expected to:

(A) apply critical elements, including purpose, target audience, and distribution, in the pre-production stage to identify and evaluate the production;

(B) demonstrate procedures to establish timelines;

(C) develop a budget with considerations for cast, crew, equipment, and location;

(D) write documents of the scripting process such as treatments, storyboards, rundowns, and scripts for various types of programs using proper formatting for the specific type of production document;

(E) identify specific elements needed for successful production such as cast, crew, equipment, location, props, and sound effects;

(F) discuss how various styles of music can create a specific emotional impact;

(G) examine the end goal of the production to determine the appropriate format for recording and distributing;

(H) identify several means to work within budget restraints;

(I) conduct auditions for the talent and secure the crew required for a successful production; and

(J) examine various contracts related to industry tasks, including talent releases for productions, and key elements for contracts such as crew, talent, location, and distribution.

(13) The student understands the business aspects of the industry. The student is expected to:

(A) understand the roles of various industry professionals by identifying and discussing the responsibilities and relationships among the production team, including producers, directors, editors, engineers, talent, additional crew members, and sales team;

(B) understand the opportunities in the industry for freelance entrepreneurs by identifying standard freelance self-promotion techniques, proposals, technology applications for freelance entrepreneurs, best practices for various freelance job responsibilities, and standard billing practices for freelance labor, including invoices and collections rates;

(C) understand the unique characteristics of live productions such as roles, equipment, time accountability, back-timing, time-based mathematics, and financial support; and

(D) identify roles, costs, equipment, and strategies for financially supporting studio and field productions.

(14) The student demonstrates an understanding of regulatory agency guidelines for content appropriateness. The student is expected to:

(A) identify applicable guidelines based on production distribution methods; and

(B) distinguish between Federal Communications Commission (FCC), National Public Radio (NPR), and other regulatory agencies.

(15) The student understands the technical broadcast standards established by the FCC. The student is expected to:

(A) apply knowledge of broadcast formats by distinguishing between analog and digital formats;

(B) describe the difference in data signals and equipment for analog and digital technology;

(C) identify the evolution of the broadcast signal and standards such as High-Definition (HD), Standard-Definition (SDTV), National Television System Committee (NTSC), Phase Alternating Line (PAL), and Sequential Color with Memory (SECAM); and

(D) identify the location of radio and television frequencies in the electromagnetic spectrum.

(16) The student understands the evolution of various media formats. The student is expected to:

(A) identify the evolution of various media formats such as tape, tapeless, film, and electronic; and

(B) identify the evolution and application of digital media formats and compression standards.

§127.168. Audio/Video Production II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Audio/Video Production I. Corequisite: Audio/Video Production II. This course must be taken concurrently with Audio/Video Production II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Audio/Video Production II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio and video technology and film production span all aspects of the audio/video communications industry. Building upon the concepts taught in Audio/Video Production, in addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on pre-production, production, and post-production products. Through diverse forms of storytelling and production, students will exercise and develop creativity, intellectual curiosity, and critical-thinking, problem-solving, and collaborative skills. This course may be implemented in an audio format or a format with both audio and video. Requiring a lab corequisite for the course affords necessary time devoted specifically to the production and post-production process.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) demonstrate professional standards and personal qualities needed to be employable such as oral and written communication, leadership, teamwork, appreciation for diversity, conflict management, customer service, work ethic, and adaptability;

(C) demonstrate skills related to seeking and applying for employment;

(D) update a resume, cover letter/letter of interest, and career portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(E) demonstrate skills in evaluating and comparing employment opportunities.

(2) The student applies academic knowledge and skills in production projects. The student is expected to:

(A) apply English language arts knowledge and skills by consistently demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, manuals, proposals, and other client-based documents; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by consistently demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(3) The student develops a perception of self, human relationships, and the world. The student is expected to:

(A) demonstrate the value and purpose of listening, observing, concentrating, cooperating, and using emotional and sensory recall;

(B) develop and practice effective voice and diction;

(C) analyze strategies such as advertising; perpetuating stereotypes; and using visual representations, special effects, and language used by media to inform, persuade, entertain, and transform culture;

(D) explore the emotional and intellectual effects of visual media on viewers; and

(E) analyze how visual and audio techniques such as special effects, editing, camera angles, reaction shots, sequencing, and music convey messages in media.

(4) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent through structure and style;

(B) analyze and organize oral and written information;

(C) analyze, interpret, and communicate information, data, and observations;

(D) create and deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals;

(G) collaborate with others in a production role such as talent, director, producer, videographer, and editor to tell a story through live or recorded productions; and

(H) exhibit public relations skills to increase internal and external customer/client satisfaction.

(5) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups;

(B) employ interpersonal skills in groups to solve problems; and

(C) demonstrate responsibility, artistic discipline, and creative problem solving by concentrating in one or more areas of audio and video production such as directing, producing, writing, videography, and editing.

(6) The student uses technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(7) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations throughout the production process;

(B) recognize and resolve potential safety concerns; and

(C) follow emergency procedures.

(8) The student applies leadership characteristics to student organizations and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by exhibiting problem-solving and management traits;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(9) The student applies ethical decision making and complies with laws regarding use of technology in audio/video production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) apply copyright laws in relation to fair use and acquisition, trademark laws, and personal privacy laws;

(C) model respect for intellectual property; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies.

(10) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student demonstrates an understanding of audio and video production. The student is expected to:

(A) understand set-up, execution, and trouble-shooting of standard systems for the audio/video industry, including editing systems, wireless and wired transmission systems, cabling, and configurations for production purposes;

(B) employ the operation of recording devices, including metering a recording signal for proper levels and proper maintenance of recording equipment; and

(C) apply appropriate industry-related terminology.

(12) The student understands the pre-production process. The student is expected to:

(A) apply critical elements, including purpose, target audience, and distribution, in the pre-production stage by identifying and evaluating the production;

(B) use advanced technology applications to facilitate pre-production by developing a budget with considerations for cast, crew, equipment, and location;

(C) write documents of the scripting process such as treatments, storyboards, rundowns, and scripts for various types of programs;

(D) use proper formatting for the specific type of production document;

(E) identify specific elements of the production document needed for successful production, such as cast, props, and sound effects;

(F) determine artistic impact of production plan;

(G) determine the use of art elements such as color, texture, form, line, and space;

(H) determine the principles of design such as continuity, pattern, rhythm, balance, proportion, and unity in products;

(I) determine cast, crew, equipment, and location requirements for a successful production;

(J) conduct auditions for the talent and secure the crew required for a successful production; and

(K) examine various contracts related to industry tasks by using talent releases for productions.

(13) The student applies the production process. The student is expected to:

(A) apply the coherent sequence of events to successfully produce a script;

(B) use lighting techniques, including three-point lighting, reflected light, color temperatures, lighting filters, lighting gels, and understand lighting and its emotional impact on productions;

(C) demonstrate a knowledge of audio techniques by using various microphone types;

(D) demonstrate an understanding of sound mixing and elements of a final audio mix;

(E) execute production of the script by demonstrating teamwork and knowledge of interpersonal skills with sensitivity to diversity when directing crew and talent;

(F) apply knowledge of the critical elements in designing activities in the production stage;

(G) employ knowledge of digital editing by addressing various distribution formats, including electronic, disk, tapeless, and tape;

(H) ingest media to an editing system for the purpose of manipulating recorded media;

(I) properly monitor equipment to ensure quality recordings;

(J) set appropriate levels before recording by using broadcast standard tools; and

(K) identify standards for logging notes during the recording process.

(14) The student understands the post-production process relating to video systems. The student is expected to:

(A) demonstrate knowledge of video systems such as digital and analog systems, software applications, and communication and network components;

(B) demonstrate an understanding of various input, processing, output, and storage devices;

(C) demonstrate an understanding of compatibility issues, including digital file formats and cross-platform connectivity; and

(D) demonstrate an understanding of high definition and standard definition output media.

(15) The student understands the post-production process relating to animation effects. The student is expected to:

(A) use character generators, fonts, colors, and principles of composition to create graphic images; and

(B) create captions or titles for video and graphics.

(16) The student understands the post-production process relating to output for distribution. The student is expected to:

(A) demonstrate proficiency in outputting production for distribution using various compression standards and techniques;

(B) understand the relationship between file size and quality;

(C) use various delivery formats such as disk, broadcast, cellular, portable devices, electronic, and online delivery;

(D) determine the appropriate delivery method based on distribution needs;

(E) extend the learning environment through digital sharing and gathering such as cloud computing, emerging collaboration technologies, data mining strategies, and mobile technologies;

(F) use appropriate computer-based productivity tools to create and modify solutions to problems;

(G) integrate productivity tools to develop and modify solutions to problems; and

(H) create technical documentation related to project specifications.

(17) The student understands the post-production process relating to level of project success. The student is expected to:

(A) critique production to determine how the various elements resulted in a successful or unsuccessful project; and

(B) recognize and evaluate final production as an art form.

§127.169. Digital Audio Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications or Digital Media or both Audio/Video Production I and Audio/Video Production I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Digital Audio Technology I was designed to provide students interested in audio production careers such as audio for radio and television broadcasting, audio for video and film, audio for animation and game design, music production and live sound, and additional opportunities and skill sets. Digital Audio Technology I does not re-place Audio Video Production courses but is recommended as a single credit, co-curricular course with an audio production technical emphasis. This course can also be paired with Digital Media. Students will be expected to develop an understanding of the audio industry with a technical emphasis on production and critical-listening skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in audio and video projects. The student is expected to:

(A) apply English language arts knowledge and skills by demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, and manuals; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands the evolution and current trends of the audio industry. The student is expected to:

(A) summarize the history and evolution of the audio production industry; and

(B) analyze the current trends of the audio production industry.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(7) The student develops leadership characteristics. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) participate in meetings; and

(D) participate in mentoring activities.

(8) The student applies ethical decision making and complies with laws and regulations regarding use of technology in audio production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) model respect for intellectual property;

(C) analyze the ethical impact of the audio production industry on society;

(D) understand and comply with all copyright and fair use laws; and

(E) understand and comply with all applicable rules and regulations of the associated governing authority such as the Federal Communications Commission (FCC), local school district, or client.

(9) The student develops career-building characteristics. The student is expected to demonstrate skills in evaluating and comparing employment opportunities.

(10) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student develops a basic understanding of the audio production industry. The student is expected to:

(A) identify various career pathways and job opportunities in the audio production industry;

(B) understand the roles of various industry audio professionals such as producers, editors, engineers, and talent as they apply to specific audio production career pathways;

(C) understand the history, current practices, and future trends for audio production careers such as radio and television broadcasting, video and film, animation and game design, music production, and live sound;

(D) describe how the changing technology is impacting the audio industry; and

(E) define and appropriately use terminology associated with the audio production industry.

(12) The student develops a basic understanding of audio production equipment. The student is expected to:

(A) understand types and application of microphones such as dynamic, condenser, ribbon, pressure zone (PZM), universal serial bus (USB), and wireless;

(B) understand pick-up patterns and application of microphones such as cardioid, omni-directional, and figure eight;

(C) understand the operation and application of audio consoles (mixers) such as broadcast consoles, live sound consoles, and recording consoles;

(D) understand the operation and application of audio processing equipment or software such as equalizer (EQ), dynamic compressor, noise gate, band pass filters, reverb, and delays;

(E) understand the operation and application of analog and digital audio recording devices such as handheld recorders, USB interfaces, multi-track devices, and digital audio workstations (DAW);

(F) understand the application of audio interconnect cabling and connectors such as XLR balanced, TRS balanced, TS unbalanced, RCA, ¼" TRS/TS, and mini TRS/TS;

(G) understand the operation and application of additional audio hardware such as musical instrument digital interface (MIDI) controllers, direct boxes, audio splitters, and analog to digital converters as needed; and

(H) understand the types and applications of audio speakers such as broadcast monitors, studio monitors, and live sound speakers.

(13) The student develops an understanding of audio production elements. The student is expected to:

(A) identify key elements (stems) of an audio production such as dialogue, sound effects, music, and environmental;

(B) understand how music styles, sound effects, or vocal performance can create a specific emotional impact;

(C) identify key technical elements of audio production for effect such as panning, ducking, track doubling, retiming, and autotune; and

(D) understand and identify digital audio codecs and compression standards such as Waveform Audio (WAV), MP3, and advanced audio coding (AAC).

(14) The student identifies, creates, and obtains required assets for audio production projects. The student is expected to:

(A) identify key elements required in audio scripts;

(B) apply writing skills to develop an audio script; and

(C) create or obtain required audio assets through recording, synthesis, or permissions.

(15) The student develops a basic understanding of a DAW and audio editing. The student is expected to:

(A) understand how to record or import various types of audio content such as audio files, MIDI data or automation;

(B) understand types and application of audio track such as instrument track, master track, auxiliary track, and global attributes track;

(C) understand audio editing tools and transitions such as cut, trim, and fade;

(D) understand the use and application of software plug-ins such as EQ, dynamic compression, reverb, and software instruments;

(E) understand the use and application of software automation; and

(F) understand the various delivery formats such as disk, broadcast, cellular, portable device, electronic, and online delivery.

§127.170. Digital Audio Technology II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Digital Audio Technology I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Digital Audio Technology II was designed to provide additional opportunities and skill sets for students interested in audio production careers such as audio for radio and television broadcasting, audio for video and film, audio for animation and game design, and music production and live sound. Digital Audio Technology II does not replace Audio Video Production courses but is recommended as a single credit, co-curricular course with an audio production technical emphasis. This course can also be paired with Digital Media. Students will be expected to develop an understanding of the audio industry with a technical emphasis on production and critical-listening skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in audio and video projects. The student is expected to:

(A) apply English language arts knowledge and skills by demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, and manuals; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands the evolution and current trends of the audio industry. The student is expected to:

(A) summarize the history and evolution of the audio production industry; and

(B) analyze the current trends of the audio production industry.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(7) The student develops leadership characteristics. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) participate in meetings; and

(D) participate in mentoring activities.

(8) The student applies ethical decision making and complies with laws and regulations regarding use of technology in audio production. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others and providing proper credit for ideas;

(B) model respect for intellectual property;

(C) analyze the ethical impact of the audio production industry on society;

(D) understand and comply with all copyright and fair use laws; and

(E) understand and comply with all applicable rules and regulations of the associated governing authority such as the Federal Communications Commission (FCC), local school district, or client.

(9) The student develops career-building characteristics. The student is expected to:

(A) create a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, and industry professional organizations; and

(C) examine employment opportunities in entrepreneurship.

(10) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student develops a basic understanding of the audio production industry. The student is expected to:

(A) identify various career pathways and job opportunities in the audio production industry;

(B) understand the roles of various industry audio professionals such as producers, editors, engineers, and talent as they apply to specific audio production career pathways;

(C) understand the history, current practices, and future trends for audio production careers such as radio and television broadcasting, video and film, animation and game design, music production, and live sound;

(D) describe how the changing technology is impacting the audio industry; and

(E) define and appropriately use terminology associated with the audio production industry.

(12) The student develops a basic understanding of audio production equipment. The student is expected to:

(A) use types and applications of microphones such as dynamic, condenser, ribbon, pressure zone (PZM), universal serial bus (USB), and wireless;

(B) use pick-up patterns and applications of microphones such as cardioid, omni-directional, and figure eight;

(C) demonstrate the operation and application of audio consoles (mixers) such as broadcast consoles, live sound consoles, and recording consoles;

(D) demonstrate the operation and application of audio processing equipment or software such as equalizer (EQ), dynamic compressor, noise gate, band pass filters, reverb, and delays;

(E) demonstrate the operation and application of analog and digital audio recording devices such as handheld recorders, USB interfaces, multi-track devices, and digital audio workstations (DAW);

(F) demonstrate the application of audio interconnect cabling and connectors such as XLR balanced, TRS balanced, TS unbalanced, RCA, ¼" TRS/TS, and mini TRS/TS;

(G) demonstrate the operation and application of additional audio hardware such as musical instrument digital interface (MIDI) controllers, direct boxes, audio splitters, and analog to digital converters as needed; and

(H) use the types and applications of audio speakers such as broadcast monitors, studio monitors, and live sound speakers.

(13) The student develops an understanding of audio production elements. The student is expected to:

(A) consistently identify key elements (stems) of an audio production such as dialogue, sound effects, music, and environmental;

(B) use music styles, sound effects, or vocal performances to create a specific emotional impact;

(C) use key technical elements of audio production for effect such as panning, ducking, track doubling, retiming, and autotune; and

(D) use digital audio codecs and compression standards such as Waveform Audio (WAV), MP3, and advanced audio coding (AAC).

(14) The student identifies, creates, and obtains required assets for audio production projects. The student is expected to:

(A) use key elements required in audio scripts;

(B) consistently apply writing skills to develop an audio script; and

(C) create or obtain required audio assets through recording, synthesis, or permissions.

(15) The student develops a basic understanding of a DAW and audio editing. The student is expected to:

(A) demonstrate how to record or import various types of audio content such as audio files, MIDI data, or automation;

(B) use types and application of audio tracks such as audio track, instrument track, master track, auxiliary track, and global attributes track;

(C) use audio editing tools and transitions such as cut, trim, and fade;

(D) demonstrate the use and application of software plug-ins such as EQ, dynamic compression, reverb, and software instruments;

(E) demonstrate the use and application of software automation; and

(F) use the various delivery formats such as disk, broadcast, cellular, portable device, electronic, and online delivery.

§127.171. Video Game Design (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Art, Audio/Video Technology, and Communications. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Video Game Design will allow students to explore one of the largest industries in the global marketplace and the new emerging careers it provides in the field of technology. Students will learn gaming, computerized gaming, evolution of gaming, artistic aspects of perspective, design, animation, technical concepts of collision theory, and programming logic. Students will participate in a simulation of a

real video game design team while developing technical proficiency in constructing an original game design.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in video game design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) apply active listening skills; and

(E) communicate with diverse individuals.

(3) The student understands and employs problem-solving methods and conflict-management skills. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(5) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) demonstrate leadership skills; and

(B) participate in a group setting.

(6) The student applies ethical decision making and understands and complies with laws regarding use of technology in video game design. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws;

(C) model respect of intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) analyze the impact of the video game design industry on society.

(7) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(8) The student develops an understanding of video game design. The student is expected to:

(A) demonstrate knowledge and appropriate use of computer operating systems;

(B) demonstrate appropriate use of hardware components, software programs, and storage devices;

(C) demonstrate knowledge of sound editing;

(D) demonstrate knowledge of file formats and cross-platform compatibility;

(E) acquire and exchange information in a variety of electronic file sharing formats; and

(F) evaluate visual information by recognizing the use of principles and elements of design.

(9) The students employs an appropriate design process to create and modify solutions to problems. The student is expected to:

(A) combine graphics, images, and sound;

(B) apply principles of design;

(C) develop and reference technical documentation; and

(D) edit products.

(10) The student researches the history and evolution of video game design. The student is expected to:

(A) explain the history of video game design;

(B) describe how changing technology is affecting the industry;

(C) analyze the use of symbols in video game design of diverse cultures;

(D) compare current video game design technologies with historical technologies;

(E) compare various styles of video game design; and

(F) explore emerging and innovative video game design technologies and software.

(11) The student understands and applies video game design principles, elements, and techniques. The student is expected to:

(A) employ audience identification, script writing, character design, storyboarding, and audio and delivery formats;

(B) describe and use motion paths, scripting, programming, and interactivity;

(C) describe lighting and perspective; and

(D) describe and use production processes such as titles, credits, and special effects.

(12) The student evaluates a product using critical-thinking skills. The student is expected to evaluate products and product quality against established criteria and rubrics.

(13) The student presents oral or written evaluations of video game design projects. The student is expected to:

(A) identify the intended audience;

(B) describe aesthetics;

(C) explain the storyline;

(D) summarize subject matter; and

(E) discuss the use of sound.

(14) The student creates video game design projects. The student is expected to use a variety of techniques and software programs.

(15) The student differentiates current programming languages. The student is expected to:

(A) discuss the use of computer programming languages in other fields of study; and

(B) demonstrate knowledge of specific programming terminology and concepts.

(16) The student applies problem-solving strategies. The student is expected to apply design specifications, step-wise refinement, or algorithm development.

(17) The student develops coding with correct and efficient use of expressions. The student is expected to use user-defined functions; proper operator precedence; and sequential, conditional, and repetitive control structures.

(18) The students applies constructive criticism to products. The student is expected to seek and respond to advice from peers and professionals in delineating technological tasks.

(19) The student uses research skills and electronic communication, with appropriate supervision, to create new knowledge. The student is expected to:

(A) participate with electronic communities as a learner, initiator, contributor, and teacher or mentor;

(B) extend the learning environment beyond the school walls with digital products created to increase teaching and learning in the foundation and enrichment curricula; and

(C) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

(20) The student uses technology applications to facilitate evaluation of communication processes and products. The student is expected to:

(A) write technology specifications for planning/evaluation rubrics documenting variables, prompts, and programming code internally and externally; and

(B) debug and solve problems using reference materials and effective strategies.

(21) The student understands technology concepts, systems, and operations as they apply to game programming. The student is expected to:

(A) identify basic game components, including the game engine, game play subsystems, data structures, models, and interfaces;

(B) generate random numbers in a program;

(C) create a program implementing conditional statements;

(D) develop an appropriate data model;

(E) demonstrate an understanding of and apply object-oriented game programming;

(F) demonstrate an understanding of game programming essentials, including event-driven programming, communicating with messages, and device management;

(G) demonstrate an understanding of the role of game events, the animation loop, and game timing;

(H) demonstrate an understanding of the role of game engines;

(I) apply basic game screen design and layout, including visual controls, user interfaces, menus, and options;

(J) use game control design to understand, access, and control input devices;

(K) demonstrate an understanding of and apply game animation, including the principles of animation and frame-based animation;

(L) demonstrate an understanding of game events, including listeners, triggers, and timed events;

(M) demonstrate an understanding of and implement collision detection, including models and sprite collisions;

(N) demonstrate an understanding of player progression, including leveling, linear progression, and maintaining high score data; and

(O) demonstrate an understanding of algorithmic decision making.

§127.172. Printing and Imaging Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended corequisite: Printing and Imaging Technology I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the printing industry with a focus on digital prepress and digital publishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in printing and imaging projects. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse groups of individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for printing and imaging projects.

(5) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(6) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ communication skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(7) The student applies ethical decision making and understands and complies with laws regarding use of technology in printing. The student is expected to:

(A) demonstrate an understanding of ethical conduct;

(B) understand copyright laws in relation to fair use and duplication of materials; and

(C) understand Creative Commons laws, including all licensing.

(8) The student develops career-building characteristics. The student is expected to:

(A) understand the use and importance of a portfolio in documenting information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities; and

(C) examine employment opportunities in entrepreneurship.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student develops a basic understanding of printing and imaging. The student is expected to:

(A) understand printing systems and their uses;

(B) describe the processes required for the production of various printed products;

(C) explain the impact of the printing industry on the U.S. economy;

(D) understand the impact of emerging technologies in hardware and software applications;

(E) understand how to manage the printing process, including customer service and sales, scheduling, and quality control;

(F) describe materials used in various printing projects;

(G) understand how to acquire information in a variety of formats;

(H) evaluate information for accuracy, validity, and usability;

(I) compare the features of graphics programs used in digital printing;

(J) explain how design elements such as text, graphics, headlines, use of color, and white space affect usability;

(K) explain the principles of typography, including font size and style;

(L) explain color theory and its use in the design process;

(M) identify graphic design concepts such as contrast, alignment, repetition, and proximity;

(N) reference technical documentation;

(O) understand file and cross-platform compatibility;

(P) identify and use the principles of design to discuss, analyze, critique, and write about visual aspects in print design, including the student's own designs; and

(Q) demonstrate knowledge of the principles of design in print design images, with a focus on composition, color, design, shape, shadow, negative space, and background.

(11) The student researches the history of the printing and imaging field. The student is expected to analyze and summarize the evolution of the printing and imaging field and its historical impact on society.

§127.173. Printing and Imaging Technology I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 9-12. Corequisite: Printing and Imaging Technology I. This course must be taken concurrently with Printing and Imaging Technology I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Printing and Imaging Technology I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to demonstrate an understanding of the printing industry with a focus on digital prepress and digital publishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or certification for printing and imaging technology employment;

(B) demonstrate positive work behaviors and personal qualities needed to be employable; and

(C) demonstrate skills related to seeking, applying for, and obtaining a desired job.

(2) The student applies academic knowledge and skills in printing and imaging projects. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for printing and imaging projects.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ communication skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in printing. The student is expected to:

(A) demonstrate an understanding of ethical conduct;

(B) apply copyright laws in relation to fair use and duplication of materials;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) demonstrate an understanding of Creative Commons laws, including all licensing.

(9) The student develops career-building characteristics. The student is expected to:

(A) maintain a portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities; and

(C) examine employment opportunities in entrepreneurship.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student develops a basic understanding of printing and imaging. The student is expected to:

(A) understand printing systems and their uses;

(B) employ processes required for the production of various printed products;

(C) demonstrate print process management, including customer service and sales, scheduling, and quality control;

(D) evaluate customer needs and materials;

(E) acquire information in a variety of formats;

(F) evaluate information for accuracy, validity, and usability;

(G) apply digital publishing techniques to create products by using word processing, graphics, or drawing programs;

(H) apply design elements such as text, graphics, headlines, and white space;

(I) apply typography concepts, including font size and style;

(J) apply color theory;

(K) apply graphic design concepts such as contrast, alignment, repetition, and proximity;

(L) edit and evaluate products;

(M) develop technical documentation;

(N) demonstrate knowledge and appropriate use of hardware components, software programs, and storage devices;

(O) demonstrate knowledge of file and cross-platform compatibility; and

(P) deliver products in a variety of media.

§127.174. Printing and Imaging Technology II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Printing and Imaging Technology I and Printing and Imaging Technology I Lab. Recommended corequisite: Printing and Imaging Technology II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the printing industry with a focus on digital prepress and desktop digital publishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in printing and imaging projects. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents such as brochures, programs, and newsletters; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present information formally and informally;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for printing and imaging projects.

(5) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(6) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(7) The student applies ethical decision making and understands and complies with laws regarding use of technology in printing. The student is expected to:

(A) demonstrate an understanding of ethical conduct;

(B) understand copyright laws;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies;

(E) understand Creative Commons laws, including all licensing; and

(F) analyze the impact of the printing industry on society.

(8) The student develops career-building characteristics. The student is expected to:

(A) understand the use and importance of a portfolio in documenting information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities; and

(C) examine employment opportunities in entrepreneurship.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student develops an advanced understanding of printing and imaging. The student is expected to:

(A) understand printing systems;

(B) explain how to manage the printing process;

(C) describe how to prepare customer materials for printing;

(D) understand a variety of printing processes;

(E) explain ink processes used for various types of printing, identify ink types, and describe how properties of ink affect coverage, color, and color separation;

(F) explain the uses of papers, including weights and finishes used for various types of printing;

(G) explain cleanup and maintenance of equipment;

(H) identify and use the principles of design to discuss, analyze, critique, and write about visual aspects in print design, including the student's own designs; and

(I) demonstrate knowledge of the principles of design in print design images with a focus on composition, color, design, shape, shadow, negative space, and background.

§127.175. Printing and Imaging Technology II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Corequisite: Printing and Imaging Technology II. This course must be taken concurrently with Printing and Imaging Technology II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Printing and Imaging Technology II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing advanced knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the printing industry with a focus on digital prepress and desktop digital publishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable; and

(C) demonstrate skills related to seeking, applying for, and obtaining a desired job, including identifying job opportunities, developing a resume and letter of application, completing a job application, and demonstrating effective interview skills.

(2) The student applies academic knowledge and skills in printing and imaging projects. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) demonstrate active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) demonstrate public relations skills to increase internal and external customer/client satisfaction.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for printing and imaging projects.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in printing. The student is expected to:

(A) demonstrate an understanding of ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) understand Creative Commons laws, including all licensing.

(9) The student develops career-building characteristics. The student is expected to:

(A) maintain and update a portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(B) demonstrate skills in evaluating and comparing employment opportunities.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student develops an advanced understanding of printing and imaging. The student is expected to:

(A) understand printing systems and their uses;

(B) demonstrate print process management;

(C) prepare customer materials for printing;

(D) demonstrate and apply a variety of printing processes;

(E) demonstrate industry standard ink processes used for various types of printing, identify ink types, and describe how properties of ink affect coverage, color, and color separation;

(F) demonstrate knowledge of papers, including weights and finishes used for various types of printing; and

(G) perform cleanup and maintenance of equipment.

§127.176. Commercial Photography I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended corequisite: Commercial Photography I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography require skills that span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the commercial photography industry with a focus on creating quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in commercial photography. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for commercial photography projects.

(5) The student understands commercial photography systems. The student is expected to analyze and summarize the history and evolution of commercial photography.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations in a photography studio and lab; and

(B) follow emergency procedures.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ communication skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in commercial photography. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of images;

(C) model respect for intellectual property when manipulating, morphing, and editing digital images;

(D) analyze the impact of photography on society; and

(E) understand Creative Commons laws, including all licensing.

(9) The student develops career-building characteristics. The student is expected to:

(A) create a portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(B) examine employment opportunities in entrepreneurship.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student develops a basic understanding of commercial photography. The student is expected to:

(A) research career opportunities and qualifications in photography;

(B) research the history and evolution of photography;

(C) analyze principles of commercial photography such as working with clients, interpreting client instructions, developing production schedules, and delivering products in a competitive market;

(D) analyze and apply the elements and principles of art to photographs;

(E) demonstrate knowledge of different types of cameras and lenses and their applications to photography;

(F) demonstrate knowledge of photographic composition and layout;

(G) demonstrate knowledge of different types of photographic media;

(H) demonstrate knowledge of the basics of digital photography;

(I) demonstrate knowledge of photographic lighting techniques, including three-point lighting;

(J) identify characteristics and uses of various types of photographic paper;

(K) demonstrate an understanding of standard conventions for mounting, matting, or framing;

(L) produce a variety of photographs using appropriate, current, industry-standard production processes;

(M) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills;

(N) understand resolution and digital file format;

(O) identify and use the principles of design to discuss, analyze, critique, and write about visual aspects in photographic work, including the student's own work; and

(P) demonstrate knowledge of the principles of design in photographic work with a focus on composition, color, design, shape, shadow, negative space, and background.

§127.177. Commercial Photography I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 9-12. Corequisite: Commercial Photography I. This course must be taken concurrently with Commercial Photography I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Commercial Photography I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography require skills that span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the commercial photography industry with a focus on creating quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or certification for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable; and

(C) demonstrate skills related to seeking employment to find and obtain a desired job.

(2) The student applies academic knowledge and skills in commercial photography. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for commercial photography projects.

(6) The student understands commercial photography systems. The student is expected to analyze and summarize the history and evolution of commercial photography.

(7) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations in a photography studio and lab; and

(B) follow emergency procedures.

(8) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ communication skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(9) The student applies ethical decision making and understands and complies with laws regarding use of technology in commercial photography. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of images;

(C) model respect for intellectual property when manipulating, morphing, and editing digital images;

(D) analyze the impact of photography on society; and

(E) understand Creative Commons Laws, including all licensing.

(10) The student develops career-building characteristics. The student is expected to:

(A) create a portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(B) examine employment opportunities in entrepreneurship.

(11) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(12) The student demonstrates a basic understanding of commercial photography. The student is expected to:

(A) analyze principles of commercial photography such as working with clients, interpreting client instructions, developing production schedules, and delivering products in a competitive market;

(B) analyze and apply the elements and principles of art to photographs;

(C) demonstrate knowledge of different types of cameras and lenses and their applications to photography;

(D) demonstrate knowledge of photographic composition and layout;

(E) demonstrate knowledge of the characteristics of different types of photographic media;

(F) demonstrate knowledge of the basics of digital photography;

(G) demonstrate knowledge of photographic lighting techniques, including three-point lighting;

(H) identify characteristics and uses of various types of photographic paper;

(I) demonstrate an understanding of standard conventions for mounting, matting, or framing;

(J) produce a variety of photographs using appropriate, current, industry-standard production processes;

(K) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills; and

(L) demonstrate an understanding of resolutions and digital file format.

§127.178. Commercial Photography II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Commercial Photography I and Commercial Photography I Lab. Recommended corequisite: Commercial Photography II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the commercial photography industry with a focus on producing, promoting, and presenting professional quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in commercial photography. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for commercial photography projects.

(5) The student applies knowledge of commercial photography systems. The student is expected to analyze and summarize the history and evolution of the commercial photography field.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations in a photography studio and lab; and

(B) follow emergency procedures.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders with organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and complies with laws regarding use of technology in commercial photography. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of images;

(C) model respect for intellectual property when manipulating, morphing, and editing digital images; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies, including Creative Common laws and licensing.

(9) The student develops career-building characteristics. The student is expected to:

(A) maintain and update a portfolio with information such as work experiences, licenses, certifications, and work samples; and

(B) demonstrate skills in evaluating and comparing employment opportunities.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks such as creating quotes and budgeting.

(11) The student develops an increased understanding of commercial photography. The student is expected to:

(A) identify photographs for commercial photography;

(B) recognize the elements and principles of art as they apply to a variety of commercial photography projects;

(C) use principles of commercial photography such as working with clients, interpreting client instructions, developing production schedules, and delivering products in a competitive market;

(D) identify appropriate cameras and lenses;

(E) recognize appropriate photographic composition and layout principles;

(F) identify the use of appropriate digital black and white and color photography;

(G) understand the use of effective photographic lighting techniques, including three-point, studio, portraiture, and product;

(H) recognize the elements of professional quality photographs;

(I) identify the most appropriate types of photographic paper for projects;

(J) recognize appropriate solutions for mounting, matting, or framing photographs;

(K) understand appropriate, current, and industry-standard production processes to produce photographs;

(L) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills;

(M) identify appropriate resolution and digital file formats;

(N) identify and use the principles of design to discuss, analyze, critique, and write about visual aspects of photographic work, including the student's own work; and

(O) demonstrate knowledge of the principles of design in photographic work with a focus on composition, color, design, shape, shadow, negative space, and background.

§127.179. Commercial Photography II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Commercial Photography I and Commercial Photography I Lab. Corequisite: Commercial Photography II. This course must be taken concurrently with Commercial Photography II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Commercial Photography II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the commercial photography industry with a focus on producing, promoting, and presenting professional quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) demonstrate positive work behaviors and personal qualities needed to be employable; and

(C) demonstrate skills related to seeking, applying for, and obtaining a desired job, including identifying job opportunities, developing a resume and letter of application, completing a job application, and demonstrating effective interview skills.

(2) The student applies academic knowledge and skills in commercial photography. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for commercial photography projects.

(6) The student applies knowledge of commercial photography systems. The student is expected to analyze and summarize the history and evolution of the commercial photography field.

(7) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations in a photography studio and lab; and

(B) follow emergency procedures.

(8) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders with organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(9) The student applies ethical decision making and complies with laws regarding use of technology in commercial photography. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of images;

(C) model respect for intellectual property when manipulating, morphing, and editing digital images; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies, including Creative Common laws and licensing.

(10) The student develops career-building characteristics. The student is expected to:

(A) maintain and update a portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(B) demonstrate skills in evaluating and comparing employment opportunities.

(11) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to complete work tasks such as creating quotes and budgeting; and

(B) demonstrate skills in budgeting and creating quotes for freelance or contract projects.

(12) The student develops an increased understanding of commercial photography. The student is expected to:

(A) create photographs for defined purposes;

(B) apply the elements and principles of art to a variety of commercial photography projects;

(C) demonstrate the principles of commercial photography such as working with clients, interpreting client instructions, developing production schedules, and delivering products in a competitive market;

(D) demonstrate the use of appropriate cameras and lenses;

(E) apply appropriate photographic composition and layout principles;

(F) demonstrate appropriate digital black and white and color photography;

(G) apply effective photographic lighting techniques, including three point, studio, portraiture, and product;

(H) produce professional quality photographs;

(I) use the most appropriate types of photographic paper for projects;

(J) use the most appropriate solutions for mounting, matting, or framing photographs;

(K) demonstrate use of appropriate, current, and industry-standard production processes to produce photographs;

(L) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills; and

(M) demonstrate use of appropriate resolution and digital file formats.

§127.180. Fashion Design I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications. Recommended corequisite: Fashion Design I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in fashion, textile, and apparel projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) communicate with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, and industry programs for fashion, textiles, and apparel projects.

(5) The student understands fashion, textile, and apparel systems. The student is expected to:

(A) analyze the history of the fashion, textiles, and apparel field; and

(B) compare fashion history relative to current fashions trends.

(6) The student applies safety regulations. The student is expected to implement personal and workplace safety rules and procedures.

(7) The student applies leadership characteristics in classroom and professional settings. The student is expected to:

(A) employ leadership skills;

(B) apply characteristics of effective working relationships;

(C) participate in groups; and

(D) employ mentoring skills.

(8) The student applies ethical decision making with laws regarding use of technology in fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) identify and apply copyright laws; and

(C) analyze fashion industry influences on society.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student analyzes the nature of fashion. The student is expected to:

(A) explain the value of fashion;

(B) identify the spectrum of the fashion industry;

(C) identify prominent fashion publications;

(D) evaluate the fashion cycle; and

(E) use appropriate terminology.

(11) The student evaluates factors influencing the apparel industry. The student is expected to:

(A) describe the interrelationship of the U.S. and international economies;

(B) identify and discuss labor laws of the United States and other countries;

(C) recognize procedures within the apparel industry that protect the environment; and

(D) describe technological advancements influencing the apparel industry.

(12) The student analyzes factors that impact consumer purchasing of fashion and apparel accessories. The student is expected to:

(A) describe social, cultural, and life cycle influences;

(B) explain how fashion trends are determined;

(C) analyze the influence of advertising on consumer apparel choices; and

(D) determine apparel management techniques for individuals with special needs.

(13) The student selects proper care and maintenance practices for apparel. The student is expected to:

(A) interpret labeling information to determine care procedures for apparel products;

(B) evaluate clothing care products and equipment;

(C) determine proper equipment and services related to care, maintenance, and storage of apparel;

(D) identify proper safety procedures when using care products and equipment; and

(E) analyze the impact of clothing care requirements on clothing selection and the clothing budget.

(14) The student applies skills related to commercial care of clothing. The student is expected to:

(A) identify procedures to receive, mark, and identify laundry or dry cleaning;

(B) identify appropriate laundry and dry cleaning procedures;

(C) identify safety and sanitation procedures while laundering, pressing, or dry cleaning;

(D) describe commercial laundry or dry cleaning techniques; and

(E) identify pressing procedures.

(15) The student proposes ways to effectively manage the apparel dollar. The student is expected to:

(A) develop a budget for apparel and accessory costs, care, and maintenance;

(B) compare various sources for apparel and accessory purchases;

(C) analyze the impact of technology on consumer apparel purchasing options; and

(D) develop and implement ideas for recycling apparel.

(16) The student designs apparel products using principles of effective design. The student is expected to:

(A) identify basic body types;

(B) identify and apply proportion, balance, emphasis, rhythm, and harmony for specific fashion ensembles;

(C) determine clothing silhouettes, fabric selection, and design elements appropriate for specific body types;

(D) use design principles to design products for the human form, including adaptations for individuals with special needs;

(E) sketch fashion drawings using basic design tools and techniques such as fashion drawing, draping, and flat pattern methods for fitting a garment; and

(F) apply technology applications useful in the apparel design process.

(17) The student designs apparel products using elements of effective design. The student is expected to:

(A) identify and apply shape, line, form, color, and texture for specific fashion ensembles;

(B) determine clothing silhouettes, fabric selection, and design elements appropriate for specific body types; and

(C) use design elements to design products for the human form, including adaptations for individuals with special needs.

§127.181. Fashion Design I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications. Corequisite: Fashion Design I. This class must be taken concurrently with Fashion Design I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Fashion Design I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) demonstrate positive work behaviors and personal qualities needed to be employable;

(C) demonstrate skills related to seeking and applying for employment; and

(D) create a career portfolio to document work samples.

(2) The student applies academic knowledge and skills in fashion, textile, and apparel projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) communicate with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, and industry programs for fashion, textiles, and apparel projects.

(6) The student analyzes the history of the fashion, textiles, and apparel field. The student is expected to:

(A) compare fashion history relative to current fashions trends; and

(B) evaluate how historical events and attitudes influence fashion trends.

(7) The student applies safety regulations. The student is expected to implement personal and workplace safety rules and procedures.

(8) The student applies leadership characteristics in classroom and professional settings. The student is expected to:

(A) employ leadership skills;

(B) apply characteristics of effective working relationships;

(C) participate in groups; and

(D) employ mentoring skills.

(9) The student applies ethical decision making with laws regarding use of technology in fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) apply copyright laws; and

(C) evaluate fashion industry influences on society.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student analyzes the nature of fashion. The student is expected to:

(A) analyze prominent fashion publications; and

(B) analyze trends using the fashion cycle.

(12) The student analyzes fiber and textile characteristics. The student is expected to:

(A) identify fibers and textiles;

(B) evaluate water resistance, heat sensitivity, and colorfastness of various textiles;

(C) evaluate textile products as to suitability for varied apparel uses; and

(D) distinguish textile selvage and grain line.

(13) The student selects proper care and maintenance practices for apparel. The student is expected to:

(A) use appropriate care procedures for textile products; and

(B) use appropriate care procedures for apparel products.

(14) The student applies skills related to commercial care of clothing. The student is expected to:

(A) demonstrate safety and sanitary procedures while laundering, pressing, or dry cleaning; and

(B) demonstrate pressing procedures.

(15) The student analyzes the apparel production process from design concept to finished product. The student is expected to:

(A) identify and describe equipment needed for the apparel production process; and

(B) outline the apparel construction process.

(16) The student applies knowledge of fibers, fabrics, and design when evaluating and designing textile products. The student is expected to:

(A) identify characteristics and properties of natural and manufactured fibers;

(B) describe methods of textile production; and

(C) assess the effects of various environmental conditions on textiles.

(17) The student demonstrates effective repair and alteration techniques. The student is expected to:

(A) use appropriate measurement tools and measurement units;

(B) demonstrate appropriate use, selection, and care of equipment, tools, and notions;

(C) apply design principles and elements when altering apparel;

(D) apply safety procedures while operating equipment; and

(E) determine apparel design and alterations to accommodate individuals with special needs.

(18) The student demonstrates effective construction techniques. The student is expected to:

(A) apply principles of quality apparel construction;

(B) apply design principles and elements when designing and constructing apparel;

(C) apply appropriate construction and pressing techniques in apparel and textile construction; and

(D) describe pattern parts and terminology.

§127.182. Fashion Design II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Fashion Design I. Recommended corequisite: Fashion Design II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in fashion, textile, and apparel projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) communicate with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, and industry programs for fashion, textiles, and apparel projects.

(5) The student analyzes the history of the fashion, textiles, and apparel field. The student is expected to analyze fashion history relative to current fashions trends.

(6) The student applies safety regulations. The student is expected to implement personal and workplace safety rules and procedures.

(7) The student applies leadership characteristics in classroom and professional settings. The student is expected to:

(A) employ leadership skills to accomplish collective goals;

(B) establish and maintain practices for effective working relationships such as providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(C) conduct and participate in meetings using parliamentary procedure; and

(D) employ mentoring skills to inspire others.

(8) The student demonstrates ethical decision making and complies with legal practices pertaining to fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct as defined by the fashion and apparel industries;

(B) apply copyright laws;

(C) model respect for intellectual property;

(D) demonstrate knowledge of acceptable use policies;

(E) summarize the rights and responsibilities of employers and employees; and

(F) analyze legal aspects of the fashion and apparel industries.

(9) The student applies advanced technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student describes how garment development and fashion have evolved from ancient times to present day. The student is expected to:

(A) evaluate significant historic fashions from early civilizations to today;

(B) describe social influences that have affected fashion;

(C) explain values communicated through clothing in specific historical periods;

(D) show the influence of historic fashions on current-year fashion; and

(E) identify prominent historical designers.

(11) The student analyzes various types of worldwide fashion production. The student is expected to:

(A) describe mass production techniques; and

(B) describe the development of haute couture.

(12) The student determines design influences on the fashion industry. The student is expected to:

(A) explain the role of leading designers in determining fashion trends;

(B) analyze international factors affecting fashion design;

(C) determine the impact of technology on the design industry; and

(D) determine the impact of design decisions on product cost.

(13) The student creates a portfolio of fashion designs. The student is expected to:

(A) demonstrate fashion figure drawing;

(B) apply design elements and principles to create fashion drawings;

(C) demonstrate the properties and characteristics of color;

(D) use computer-aided techniques to create fashion designs;

(E) select appropriate textiles to use in specific designs; and

(F) assemble portfolio components to present fashion designs.

(14) The student demonstrates basic techniques in personal fashion image analysis. The student is expected to:

(A) describe techniques used to analyze the fashion image of individual clients;

(B) analyze factors involved in fashion image consulting such as personal coloring, color harmonies, appropriate fabric textures, body proportion and silhouette, figure, facial and hair analysis, and wardrobe coordination; and

(C) develop a personal fashion image evaluation for an individual.

§127.183. Fashion Design II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Fashion Design I. Corequisite: Fashion Design II. This course must be taken concurrently with Fashion Design II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Fashion Design II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the fashion industry with an emphasis on design and construction.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or certification for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job;

(D) create a career portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(E) examine employment opportunities in entrepreneurship.

(2) The student applies academic knowledge and skills in fashion, textile, and apparel projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(3) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) communicate with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, word processors, industry programs, slide show presentation, and spreadsheet applications for fashion, textiles, and apparel projects.

(6) The student understands fashion, textile, and apparel systems. The student is expected to analyze and summarize the history and evolution of the fashion, textiles, and apparel field.

(7) The student applies safety regulations. The student is expected to implement personal and workplace safety rules and procedures.

(8) The student applies leadership characteristics in classroom and professional settings. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(C) conduct and participate in meetings using parliamentary procedure; and

(D) employ mentoring skills to inspire and teach others.

(9) The student demonstrates ethical decision making and complies with legal practices pertaining to fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property;

(D) demonstrate knowledge of acceptable use policies;

(E) summarize the rights and responsibilities of employers and employees;

(F) exhibit ethical practices as defined by the fashion and apparel industries; and

(G) analyze legal aspects of the fashion and apparel industries.

(10) The student applies advanced technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student performs operations for various roles in the fashion industry. The student is expected to:

(A) identify tasks that employees may perform;

(B) follow procedures identified for performing tasks; and

(C) apply resource management procedures when completing assigned tasks.

(12) The student determines textile suitability for specific applications and uses. The student is expected to:

(A) compare processes for dyeing, printing, and finishing used in the textile industry;

(B) explain how finishes affect the characteristics of fabrics; and

(C) recommend care procedures for various textile products.

(13) The student determines implications of textile characteristics on apparel and fashion. The student is expected to:

(A) outline the textile design process from concept to finished product;

(B) differentiate types and methods of textile production;

(C) summarize implications and methods of dyeing, printing, and finishing of textiles;

(D) determine textile and apparel labeling requirements; and

(E) determine factors affecting the cost of textile products.

(14) The student creates a portfolio of fashion designs. The student is expected to:

(A) demonstrate fashion figure drawing;

(B) apply design elements and principles to create fashion drawings;

(C) use computer-aided techniques to create fashion designs;

(D) select appropriate textiles to use in specific designs; and

(E) assemble portfolio components to present fashion designs.

(15) The student produces quality fashion products. The student is expected to:

(A) outline general procedures and equipment used in apparel design and pattern development;

(B) construct custom made garments using appropriate tools, equipment, and supplies;

(C) develop garments for proper fit;

(D) apply correct procedures used in garment fitting, pattern making, and pattern alterations;

(E) construct custom made garments; and

(F) demonstrate safety practices related to garment construction.

(16) The student demonstrates basic techniques in personal fashion image analysis. The student is expected to:

(A) describe techniques used to analyze the fashion image of individual clients;

(B) analyze factors involved in fashion image consulting such as personal coloring, color harmonies, appropriate fabric textures, body proportion and silhouette, figure, facial and hair analysis, and wardrobe coordination; and

(C) develop a personal fashion image evaluation for an individual.

§127.184. Graphic Design and Illustration I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications. Recommended corequisite: Graphic Design and Illustration I Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, in addition to developing knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on fundamental elements and principles of visual art and design.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in art and design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student understands professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(3) The student understands and employs problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for art and design projects.

(5) The student understands design systems. The student is expected to analyze and summarize the history and evolution of related fields.

(6) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in graphic design and illustration. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and acquisition;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) analyze the impact of the advertising and visual communication design industry on society.

(9) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student develops an increasing understanding of graphic design and illustration. The student is expected to research art and design career opportunities and qualifications.

(11) The student researches the history and evolution of art and design. The student is expected to:

(A) explain the history of visual arts and design;

(B) understand general characteristics in artwork from a variety of cultures; and

(C) compare current visual arts technologies with historical technologies.

(12) The student conducts oral or written critiques of designs. The student is expected to:

(A) interpret, evaluate, and justify design decisions;

(B) apply a critical method of evaluation;

(C) communicate an oral or written defense; and

(D) evaluate oral or written feedback.

(13) The student demonstrates an understanding of artistic design. The student is expected to analyze and apply art elements and principles in photographic works, multimedia applications, and digital and print media.

(14) The student employs a creative design process to create original two- or three-dimensional projects. The student is expected to:

(A) create designs for defined applications;

(B) apply elements of design;

(C) apply design principles and typography;

(D) use good composition;

(E) demonstrate anatomical figure drawing;

(F) demonstrate drawing in one-point, two-point, and multi-point perspective;

(G) create a project by applying color; and

(H) apply printing concepts.

§127.185. Graphic Design and Illustration I Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Arts, Audio/Video Technology, and Communications. Corequisite: Graphic Design and Illustration I. This class must be taken concurrently with Graphic Design and Illustration I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Graphic Design and Illustration I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, in addition to developing knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an understanding of the industry with a focus on fundamental elements and principles of visual art and design.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and participate in training, education, or certification for employment;

(B) identify and demonstrate positive work behaviors and personal qualities needed to be employable;

(C) demonstrate skills related to seeking employment to find and obtain a desired job;

(D) maintain a career portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(E) examine employment opportunities in entrepreneurship.

(2) The student applies academic knowledge and skills in art and design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(3) The student understands professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(4) The student understands and employs problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(5) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing and presentation applications for art and design projects.

(6) The student understands design systems. The student is expected to analyze and summarize the history and evolution of related fields.

(7) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(8) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(9) The student applies ethical decision making and understands and complies with laws regarding use of technology in graphic design and illustration. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) apply copyright laws in relation to fair use and acquisition;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) analyze the impact of the advertising and visual communication design industry on society.

(10) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(11) The student develops an increasing understanding of graphic design and illustration. The student is expected to research art and design career opportunities and qualifications.

(12) The student researches the history and evolution of art and design. The student is expected to:

(A) explain the history of visual arts and design;

(B) understand general characteristics in artwork from a variety of cultures; and

(C) compare current visual arts technologies with historical technologies.

(13) The student conducts oral or written critiques of designs. The student is expected to:

(A) interpret, evaluate, and justify design decisions;

(B) apply a critical method of evaluation;

(C) communicate an oral or written defense; and

(D) evaluate oral or written feedback.

(14) The student demonstrates an understanding of artistic design. The student is expected to analyze and apply art elements and principles in photographic works, multimedia applications, and digital and print media.

(15) The student employs a creative design process to create original two- or three-dimensional projects. The student is expected to:

(A) create designs for defined applications;

(B) apply elements of design;

(C) apply design principles and typography;

(D) use good composition;

(E) demonstrate anatomical figure drawing;

(F) demonstrate drawing in one-point, two-point, and multi-point perspective;

(G) create a project by applying color; and

(H) apply printing concepts.

§127.186. Graphic Design and Illustration II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Graphic Design and Illustration I. Recommended corequisite: Graphic Design and Illustration II Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on mastery of content knowledge and skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in art and design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student understands and employs problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(3) The student applies knowledge of design systems. The student is expected to analyze and summarize the history and evolution of related fields.

(4) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(5) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills;

(B) employ teamwork and conflict-management skills;

(C) conduct and participate in meetings; and

(D) employ mentoring skills.

(6) The student applies ethical decision making and complies with laws regarding use of technology in art and design. The student is expected to:

(A) exhibit ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) identify the impact of the advertising and visual communication design industry on society.

(7) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(8) The student develops an advanced understanding of graphic design and illustration. The student is expected to:

(A) interpret, evaluate, and justify design decisions;

(B) participate in oral or written critiques of designs by applying a critical method of evaluation; and

(C) identify and apply art elements and principles to designs and illustrations.

§127.187. Graphic Design and Illustration II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Graphic Design and Illustration I. Corequisite: Graphic Design and Illustration II. This course must be taken concurrently with Graphic Design and Illustration II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Graphic Design and Illustration II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industries. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced understanding of the industry with a focus on mastery of content knowledge and skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) participate in training, education, or certification for employment;

(B) demonstrate positive work behaviors and personal qualities needed to be employable;

(C) demonstrate skills related to seeking and applying for employment to find and obtain a desired job, including identifying job opportunities, developing a resume and letter of application, completing a job application, and demonstrating effective interview skills;

(D) maintain a career portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(E) demonstrate skills in evaluating and comparing employment opportunities.

(2) The student applies academic knowledge and skills in art and design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(3) The student demonstrates professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) demonstrate active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills.

(4) The student applies technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for art and graphic design projects.

(5) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(6) The student demonstrates ethical decision making and complies with laws regarding use of technology in art and design. The student is expected to:

(A) exhibit ethical conduct;

(B) apply copyright laws;

(C) model respect for intellectual property; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies.

(7) The student applies technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(8) The student develops an advanced understanding of graphic design and illustration. The student is expected to interpret, evaluate, and justify design decisions.

(9) The student participates in oral or written critiques of designs. The student is expected to:

(A) apply a critical method of evaluation;

(B) communicate an oral or written defense; and

(C) identify and demonstrate art elements and principles in designs and illustrations.

(10) The student employs a creative design process to create original two- or three-dimensional projects. The student is expected to:

(A) create designs for defined applications;

(B) demonstrate elements of design;

(C) demonstrate design principles and typography;

(D) use appropriate composition;

(E) use anatomically appropriate figure drawing;

(F) use appropriate perspective;

(G) use the most effective color choices in projects; and

(H) use printing concepts.

§127.188. Professional Communications (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. This course satisfies a speech credit or skills graduation requirement. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Professional Communications blends written, oral, and graphic communication in a career-based environment. Careers in the global economy require individuals to be creative and have a strong background in computer and technology applications, a strong and solid academic foundation, and a proficiency in professional oral and written communication. Within this context, students will be expected to develop and expand the ability to write, read, edit, speak, listen, apply software applications, manipulate computer graphics, and conduct Internet research.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies English language arts in professional communications projects. The student is expected to:

(A) demonstrate use of content, technical concepts, and vocabulary;

(B) use correct grammar, punctuation, and terminology to write and edit documents;

(C) identify assumptions, purpose, outcomes, solutions, and propaganda techniques;

(D) compose and edit copy for a variety of written documents;

(E) evaluate oral and written information; and

(F) research topics for the preparation of oral and written communications.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) develop and interpret tables, charts, and figures;

(G) listen to and speak with diverse individuals; and

(H) exhibit public relations skills.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student uses technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student understands communications systems. The student is expected to:

(A) describe the nature and types of businesses;

(B) analyze and summarize the history and evolution of the various related fields of study; and

(C) analyze the economic base in order to demonstrate an understanding of the economic factors influencing the industry as a whole.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and classroom safety rules and regulations; and

(B) follow emergency procedures as needed.

(7) The student identifies and develops leadership characteristics. The student is expected to:

(A) identify leadership characteristics; and

(B) participate in student leadership and professional development activities.

(8) The student applies ethical decision making and understands and complies with laws regarding use of technology in communications. The student is expected to:

(A) exhibit ethical conduct;

(B) discuss copyright laws in relation to fair use and duplication of materials;

(C) analyze the impact of communications on society; and

(D) understand and exhibit digital citizenship.

(9) The student applies technical skills for efficiency. The student is expected to:

(A) employ planning and time-management skills to relate to professional communications; and

(B) use technology to enhance productivity.

(10) The student develops an understanding of professional communications through exploration of the Arts, Audio Visual Technology, and Communications Career Cluster. The student is expected to:

(A) develop an understanding of the evolution of the arts, audio/video technology, and communications career field, including the history, foundation elements, principles, and communicative effects;

(B) demonstrate knowledge of the communication process, including the characteristics of oral language, types and effects of nonverbal communication, effective nonverbal strategies such as a firm handshake, direct eye contact, and appropriate use of space and distance;

(C) demonstrate knowledge of the components of the listening process and specific kinds of listening such as critical, deliberative, and empathetic;

(D) identify and analyze ethical and social responsibilities of communicators;

(E) demonstrate knowledge of various communication processes in professional contexts, including using effective communication skills; analyzing standards for appropriate use of informal, standard, and technical language; making appropriate and important communication decisions based on accurate and complete information; and recognizing and analyzing appropriate channels of communication in organizations;

(F) use appropriate interpersonal communication strategies in professional contexts, including using different types of professional communication and communication management skills and observing professional etiquette;

(G) demonstrate knowledge of the interview process, including effective communication as interviewee and interviewer, and federal employment laws regarding interviews;

(H) identify and use appropriate strategies for communicating with a variety of audiences;

(I) identify the types, purposes, dynamics, processes, effectiveness, roles of members, and leadership styles of professional groups;

(J) communicate effectively in group contexts by assuming productive roles, solving problems, managing conflicts, and building consensus in groups;

(K) research formal and informal professional presentations by analyzing the audience, occasion, purpose, and primary and secondary sources; determining specific topics for presentations; and evaluating sources using media literacy strategies such as recognizing bias, misinformation, untruths, and source credibility;

(L) develop formal and informal professional presentations using effective strategies to organize presentations, using information to support points in presentations, preparing scripts or notes, using visual or auditory aids to enhance presentations, and providing credit for information sources;

(M) conduct formal and informal professional presentations using effective verbal and nonverbal strategies to inform, persuade, or motivate an audience;

(N) use appropriate techniques to manage communication apprehension and build self-confidence;

(O) evaluate formal and informal professional presentations by participating in question-and-answer sessions following presentations, applying critical-listening strategies, and evaluating the effectiveness of presentations, including self-evaluation;

(P) participate in an informative or persuasive group discussion;

(Q) use a variety of strategies to acquire information from electronic resources;

(R) acquire electronic information in a variety of formats;

(S) use research skills and electronic communications;

(T) format digital information for appropriate and effective communication in a product by defining the purpose, identifying the intended audience, and using the principles of page design such as leading, kerning, automatic text flow into linked columns, widows, orphans, and text wrap;

(U) apply desktop publishing to create products using word processing programs, editing products, or drawing programs; design elements such as text, graphics, headlines, color, white space; typography concepts, including font size and style; and graphic design concepts such as contrast, alignment, repetition, and proximity;

(V) develop and reference technical documentation; and

(W) deliver digital products in a variety of appropriate media.

§127.189. Digital Design and Media Production (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. This course is recommended for students in Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Digital Design and Media Production will allow students to demonstrate creative thinking, develop innovative strategies, and use communication tools in order to work effectively with others as well as independently. Students will gather information electronically, which will allow for problem solving and making informed decisions regarding media projects. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will demonstrate a thorough understanding of digital design principles that is transferable to other disciplines. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student employs a creative design process to create original projects as they relate to purposes and audiences. The student is expected to:

(A) create designs for defined projects such as graphics, logos, and page layouts;

(B) apply design elements and typography standards; and

(C) use visual composition principles.

(2) Communication and collaboration. The student understands professional digital media communications strategies. The student is expected to:

(A) adapt the language and design of a project for audience, purpose, situation, and intent;

(B) organize oral, written, and graphic information into formal and informal publications;

(C) interpret and communicate information to multiple audiences; and

(D) collaborate to create original projects, including seeking and responding to advice from others such as peers or experts in the creation and evaluation process.

(3) Research and information fluency. The student uses a variety of strategies to plan, obtain, evaluate, and use valid information. The student is expected to:

(A) obtain print and digital information such as graphics, audio, and video from a variety of resources while citing the sources;

(B) evaluate information for accuracy and validity; and

(C) present accurate information using techniques appropriate for the intended audience.

(4) Critical thinking, problem solving, and decision making. The student implements problem-solving methods using criti-

cal-thinking skills to plan, implement, manage, and evaluate projects; solve problems; and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) employ critical-thinking and interpersonal skills to solve problems and make decisions through planning and gathering, interpreting, and evaluating data;

(B) identify and organize the tasks for completion of a project using the most appropriate digital tools;

(C) distinguish design requirements as they relate to the purposes and audiences of a project and apply appropriate design elements;

(D) seek and respond to input from others, including peers, teachers, and outside collaborators;

(E) evaluate a process and project both independently and collaboratively and make suggested revisions; and

(F) transfer critical-thinking, problem-solving, and decision-making processes when using new technologies.

(5) Digital citizenship. The student complies with standard practices and behaviors and upholds legal and ethical responsibilities. The student is expected to:

(A) examine copyright and fair use guidelines with regard to print and digital media;

(B) model ethical and legal acquisition and use of digital resources such as licensing and established methods of citing sources;

(C) demonstrate proper digital etiquette, personal security guidelines, use of network resources, and application of the district's acceptable use policy for technology; and

(D) identify and demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, listening attentively to speakers, willingness to learn new knowledge and skills, and pride in quality work.

(6) Technology operations and concepts. The student uses technology concepts, systems, and operations as appropriate for a project. The student is expected to:

(A) define the purpose of a product and identify the specified audience;

(B) demonstrate appropriate project management to:

(i) create a plan for a media project such as a storyboard, stage development, and identification of equipment and resources; and

(ii) evaluate design, content delivery, purpose, and audience throughout a project's timeline and make suggested revisions until completion of the project;

(C) use hardware, software, and information appropriate to a project and its audience to:

(i) acquire readily available digital information, including text, audio, video, and graphics, citing the sources;

(ii) create digital content through the use of various devices such as video camera, digital camera, scanner, microphone, interactive whiteboard, video capture, and musical instrument;

(iii) collaborate via online tools such as blogs, discussion boards, email, and online learning communities;

(iv) make decisions regarding the selection and use of software, taking into consideration operating system platform, quality, appropriateness, effectiveness, and efficiency;

(v) delineate and make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity; and

(vi) demonstrate the ability to import and export elements from one program to another;

(D) use digital typography standards such as:

(i) one space after punctuation, the use of em- and en-dashes, and smart quotation marks;

(ii) categories of type, font, size, style, and alignment appropriate for the task;

(iii) type techniques such as drop cap, decorative letters, or embedded text frames as graphic elements;

(iv) leading and kerning, automatic text flow into linked columns, widows and orphans, and text wrap; and

(v) type measurement for inches and picas;

(E) apply design and layout principles and techniques to:

(i) incorporate the principles of design, including balance, contrast, dominant element, white space, consistency, repetition, alignment, and proximity;

(ii) apply the elements of design, including text, graphics, and white space;

(iii) apply color principles appropriate to the product in order to communicate the mood for the specific audience;

(iv) identify the parts of pages, including inside margin, outside margin, and gutter;

(v) create a master template, including page specifications and other repetitive elements; and

(vi) use style sheets, including a variety of type specifications such as typeface, style, size, alignment, indents, and tabs;

(F) demonstrate appropriate use of digital photography and editing to:

(i) use digital photography equipment to capture still-shot images that incorporate various photo composition techniques, including lighting, perspective, candid versus posed, rule of thirds, and filling the frame;

(ii) transfer digital images from equipment to the computer; and

(iii) demonstrate image enhancement techniques such as feathering, layering, color enhancement, and image selection using appropriate digital manipulation software;

(G) demonstrate appropriate use of videography equipment and techniques to:

(i) use digital photography equipment to capture video that incorporates video principles such as lighting, zooming, panning, and stabilization;

(ii) transfer video from equipment to the computer;

(iii) demonstrate videographic enhancement and editing techniques such as transitions, zooming, content editing, and

synchronizing audio and video using appropriate digital manipulation software; and

(iv) export video in digital formats to be used in various delivery systems such as podcasting, downloadable media, embedding, and streaming; and

(H) deploy digital media into print, web, and video products to:

(i) produce digital files in various formats such as portable document format (PDF), portable network graphics (PNG), and HyperText Markup Language (HTML);

(ii) publish integrated digital content such as video, audio, text, graphics, and motion graphics following appropriate digital etiquette standards;

(iii) publish and share projects using online methods such as social media and collaborative sites;

(iv) incorporate various digital media into a printed document such as a newsletter, poster, or report;

(v) use printing options such as tiling, color separations, and collation; and

(vi) collect and organize student-created products to build an individual portfolio.

§127.190. Digital Art and Animation (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: Art, Level I. This course is recommended for students in Grades 9-12. This course satisfies the high school fine arts graduation requirement.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Digital Art and Animation consists of computer images and animations created with digital imaging software. Digital Art and Animation has applications in many careers, including graphic design, advertising, web design, animation, corporate communications, illustration, character development, script writing, storyboarding, directing, producing, inking, project management, editing, and the magazine, television, film, and game industries. Students in this course will produce various real-world projects and animations. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) evaluate, edit, and create scripts for animations;

(B) identify and apply color theories, including harmony rules, tints, shades, gradients, color mixing, new color creation, and the visual impacts of specific color combinations using a digital format;

(C) compare, contrast, and integrate the basic sound editing principles, including mixing and manipulating wave forms, audio tracks, and effects;

(D) compare and contrast the rules of composition such as the rule of thirds or the golden section/rectangle with respect to harmony and balance;

(E) evaluate the fundamental concepts of a digital art and design such as composition, perspective, angles, lighting, repetition, proximity, white space, balance, and contrast;

(F) analyze digital art designs to interpret the point of interest, the prominence of the subject, and visual parallels between the structures of natural and human-made environments;

(G) distinguish among typefaces while recognizing and resolving conflicts that occur through the use of typography as a design element;

(H) use perspective, including backgrounds, light, shades and shadows, hue and saturation, and scale, to capture a focal point and create depth;

(I) use the basic principles of design such as proportion, balance, variety, emphasis, harmony, symmetry, and unity in type, color, size, line thickness, shape, and space;

(J) edit files using appropriate digital editing tools and established design principles such as consistency, repetition, alignment, proximity, white space, image file size, color use, and font size, type, and style; and

(K) identify pictorial qualities in a design such as shape and form, space and depth, or pattern and texture to create visual unity and desired effects in designs.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) use vocabulary as it relates to digital art, audio, and animation;

(B) demonstrate the use of technology to participate in self-directed and collaborative activities within the global community;

(C) participate in electronic communities;

(D) create technology specifications for tasks and rubrics for the evaluation of products;

(E) design and implement procedures to track trends, set timelines, and evaluate products;

(F) collaborate with peers in delineating technological tasks;

(G) publish and save information in a variety of ways, including print or digital formats;

(H) analyze and evaluate projects for design, content delivery, purpose, and audience; and

(I) critique original digital artwork, portfolios, and products with peers.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) distinguish between and correctly apply process color (RGB and CYMK), spot color, and black or white;

(B) research the history of digital art and animation;

(C) research career choices in digital art and animation;

(D) use the Internet to retrieve information in an electronic format;

(E) demonstrate the appropriate use of digital imaging, video integration, and sound retrieved from an electronic format;

(F) import sounds from a variety of sources; and

(G) create planning designs such as rough sketches, storyboards, and brainstorming materials.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) distinguish between and use the components of animation software programs such as cast, score, stage, and the animation manipulation interface;

(B) distinguish between and use different animation techniques such as path and cell animation, onion skinning, and tweening;

(C) create three-dimensional effects by layering images such as foreground, middle distance, and background images;

(D) apply a variety of color schemes such as monochromatic, analogous, complementary, primary/secondary triads, cool/warm colors, and split complements to digital designs;

(E) use the basic concepts of color and design theory such as working in a bitmapped and vector mode to create backgrounds, characters, and other cast members as needed for the animation;

(F) use the appropriate scripting language or program code to create an animation;

(G) use a variety of lighting techniques such as shadows and shading to create effects; and

(H) define the design attributes and requirements of products created for a variety of purposes such as posters, billboards, logos, corporate identity, advertisements, book jackets, brochures, and magazines.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) discuss copyright laws/issues and use of digital information such as attributing ideas and citing sources using established methods;

(B) define plagiarism and model respect of intellectual property;

(C) demonstrate proper digital etiquette and knowledge of acceptable use policies when using technology; and

(D) evaluate the validity and reliability of sources.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;

(B) make decisions regarding the selection and use of software and Internet resources;

(C) make necessary adjustments regarding compatibility issues with digital file formats, importing and exporting data, and cross-platform compatibility; and

(D) read, use, and develop technical documentation.

§127.191. 3-D Modeling and Animation (One Credit)

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: Art, Level I. This course is recommended for students in Grades 9-12. This course satisfies the high school fine arts graduation requirement.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) 3-D Modeling and Animation consists of computer images created in a virtual three-dimensional (3-D) environment. 3-D Modeling and Animation has applications in many careers, including criminal justice, crime scene, and legal applications; construction and architecture; engineering and design; and the movie and game industries. Students in this course will produce various 3-D models of real-world objects. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) evaluate, edit, and create scripts for animations;

(B) identify and apply color theories, including harmony rules, tints, shades, gradients, color mixing, new color creation, and the visual impacts of specific color combinations using a digital format;

(C) apply texture, transparency, skinning, and contour along a 3-D object surface;

(D) compare, contrast, and integrate the basic sound editing principles, including mixing and manipulating wave forms, audio tracks, and effects;

(E) compare and contrast the rules of composition such as the rule of thirds or the golden section/rectangle with respect to harmony and balance;

(F) evaluate the fundamental concepts of 3-D modeling and design such as composition, perspective, angles, lighting, repetition, proximity, white space, balance, and contrast;

(G) analyze 3-D model objects to interpret the point of interest, the prominence of the subject, and visual parallels between the structures of natural and human-made environments;

(H) distinguish among typefaces while recognizing and resolving conflicts that occur through the use of typography as a design element;

(I) use perspective, including spot and directional light, backgrounds, ambience, shades and shadows, and hue and saturation;

(J) use the basic principles of design such as proportion, balance, variety, emphasis, harmony, symmetry, and unity in type, color, size, line thickness, shape, and space;

(K) edit files using appropriate digital editing tools and established design principles such as consistency, repetition, alignment, proximity, white space, image file size, color use, font size, type, and style; and

(L) identify pictorial qualities in a design such as shape and form, space and depth, or pattern and texture to create visual unity and desired effects in designs.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) use vocabulary as it relates to digital art, audio, and animation;

(B) demonstrate the use of technology to participate in self-directed and collaborative activities within the global community;

(C) participate in electronic communities;

(D) create technology specifications for tasks and rubrics for the evaluation of products;

(E) design and implement procedures to track trends, set timelines, and evaluate products;

(F) collaborate with peers in delineating technological tasks;

(G) publish and save information in a variety of ways, including print or digital formats;

(H) analyze and evaluate projects for design, content delivery, purpose, and audience; and

(I) critique original 3-D digital artwork, portfolios, and products with peers.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) distinguish among and correctly apply process color (RGB and CYMK), spot color, and black or white;

(B) research the history of 3-D modeling and 3-D animation;

(C) research career choices in 3-D modeling and 3-D animation;

(D) use the Internet to retrieve information in an electronic format;

(E) demonstrate the appropriate use of 3-D objects, digital imaging, video integration, and sound retrieved from an electronic format;

(F) import sounds from a variety of sources; and

(G) create planning designs such as rough sketches, storyboards, and brainstorming materials.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) distinguish between and use the components of 3-D animation software programs such as cast, score, environment, the X-Y-Z coordinate system, and the animation manipulation interface;

(B) distinguish between and use the different 3-D modeling techniques such as box modeling, transformation, and polygon primitives using extrusion and rotation;

(C) distinguish between and use the different 3-D animation techniques such as path and rendering using dynamics and physics;

(D) apply a variety of color schemes such as monochromatic, analogous, complementary, primary/secondary triads, cool/warm colors, and split complements to digital designs;

(E) use the basic concepts of color and design theory such as working with 3-D models and environments, characters, objects, and other cast members as needed for the animation;

(F) use the appropriate rendering techniques to create an animation;

(G) use a variety of lighting techniques such as shadow, shading, point, spot, directional, and ambient to create effects; and

(H) define the design attributes and requirements of a 3-D animation project.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) discuss copyright laws/issues and use of digital information such as attributing ideas and citing sources using established methods;

(B) define plagiarism and model respect of intellectual property;

(C) demonstrate proper digital etiquette and knowledge of acceptable use policies when using technology; and

(D) evaluate the validity and reliability of sources.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components;

(B) make decisions regarding the selection and use of software and Internet resources;

(C) make necessary adjustments regarding compatibility issues with digital file formats, importing and exporting data, and cross-platform compatibility; and

(D) read, use, and develop technical documentation.

§127.192. Digital Communications in the 21st Century (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. This course is recommended for students in Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Digital Communications in the 21st Century will prepare students for the societal demands of increased civic literacy, independent working environments, global awareness, and the mastery of a base set of analysis and communication skills. Students will be expected to design and present an effective product based on well-researched issues in order to thoughtfully propose suggested solutions to authoritative stakeholders. The outcome of the process and product approach is to provide students an authentic platform to demonstrate effective application of multimedia tools within the contexts of global communication and collaborative communities and appropriately share their voices to affect change that concerns their future. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates the ability to analyze, evaluate, and adapt during the creative problem-solving process and demonstrates creative thinking in developing solutions to real-world issues using digital tools. The student is expected to:

(A) generate innovative, sustainable solutions for real-world issues such as global warming, immigration, or the global economy using emerging digital tools;

(B) gather and evaluate accurate information for feasibility and practicality as a basis for making communication decisions; and

(C) analyze the ethical and social responsibilities as a project team when communicating with peers, stakeholders, and experts.

(2) Creativity and innovation. The student uses innovative thinking to develop new ideas and processes for solving real-world issues and conveying those ideas to a global audience through a persuasive digital product. The student is expected to:

(A) examine real-world issues relating to current topics such as health care, government, business, or aerospace;

(B) develop innovative solutions to address issues;

(C) create unique methods and products conveying solutions to audiences beyond the classroom such as school officials, nonprofit organizations, higher education officials, government, or other stakeholders;

(D) demonstrate the effective use and importance of verbal and nonverbal communication skills when presenting ideas and solutions to diverse audiences; and

(E) use appropriate techniques to manage communication apprehension, build self-confidence, and gain command of information.

(3) Communication and collaboration. The student develops a process to effectively communicate with peers, experts, and other audiences about current issues and solutions to global problems. The student is expected to:

(A) demonstrate innovative uses of a wide range of emerging technologies, including online learning, mobile devices, digital content, and Web 2. 0 tools such as podcasting, wikis, and blogs;

(B) participate within appropriate electronic communities as a learner, initiator, and contributor;

(C) extend the learning environment beyond the school walls using appropriate digital tools;

(D) collaborate with a variety of field experts;

(E) prepare for, organize, and participate in an informative or persuasive group discussion with an audience; and

(F) participate appropriately in conversations by making clear requests, giving accurate directions, and asking purposeful questions.

(4) Communication and collaboration. The student uses digital tools to facilitate collaboration and communication in the design, development, and evaluation of products offering solutions to real-world issues. The student is expected to:

(A) design and organize resources to create an effective collaborative working environment that enables a group to investigate a local, state, national, or global issue;

(B) analyze and evaluate effective communication;

(C) demonstrate leadership by managing project activities such as timelines, research, product development, marketing material, and effective communication skills;

(D) demonstrate effective management of diverse peer-group dynamics such as solving problems, managing conflicts, and building consensus; and

(E) evaluate original products for accuracy, validity, and compliance with copyright laws.

(5) Research and information fluency. The student uses a variety of strategies to acquire and evaluate information relating to real-world issues. The student is expected to:

(A) locate authoritative information from primary and secondary sources such as field experts, online full-text databases, or current news databases;

(B) make decisions regarding the selection, acquisition, and use of information gathered, taking into consideration its quality, appropriateness, effectiveness, and level of interest to society; and

(C) demonstrate fluency in the use of a variety of electronic sources such as cloud computing, emerging collaboration technologies, data mining strategies, and mobile or other technologies.

(6) Research and information fluency. The student uses a variety of digital tools to synthesize information related to real-world issues in student-created materials. The student is expected to:

(A) construct real-world informational materials that inform, persuade, or recommend reform of selected issues;

(B) identify and employ a method to evaluate the design, functionality, and accuracy of the student-created materials; and

(C) use effective strategies to organize and outline presentations to support and clarify points.

(7) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to conduct research, manage products, solve problems, and make informed decisions for real-world local, state, national, and global issues. The student is expected to:

(A) identify and define authentic problems and significant questions for investigation;

(B) design and implement procedures to track trends, set timelines, and review and evaluate progress for project completion;

(C) read and use technical documentation, including appropriate help options, to complete tasks; and

(D) analyze the audience, occasion, and purpose when designing presentations.

(8) Critical thinking, problem solving, and decision making. The student creates a product presenting solutions for real-world local, state, national, and global issues. The student is expected to:

(A) create technology specifications for tasks and rubrics to evaluate products and product quality against established criteria;

(B) resolve information conflicts and validate information by comparing data;

(C) represent diverse perspectives in problem solutions; and

(D) prepare and use visual or auditory aids such as scripts, notes, or digital applications to enhance presentations.

(9) Digital citizenship. The student examines ethical and legal behavior to demonstrate leadership as a digital citizen. The student is expected to:

(A) model safe and ethical use of digital information;

(B) model respect of intellectual property when manipulating, morphing, or editing graphics, video, text, and sound;

(C) use technology applications in a positive manner that supports productivity, collaboration, and continuing education; and

(D) use professional etiquette and protocol in situations such as making introductions, offering and receiving criticism, and communicating with digital tools.

(10) Digital citizenship. The student demonstrates ethical and legal behavior in the creation of student products. The student is expected to:

(A) use collaborative tools and strategies; and

(B) use digital tools to correctly document sources such as in bibliographies or works cited.

(11) Technology operations and concepts. The student makes decisions regarding the selection, acquisition, and use of digital tools in a multimedia classroom/lab, taking into consideration the quality, appropriateness, effectiveness, and efficiency of the tools. The student is expected to:

(A) determine the most appropriate file type based on universally recognized file formats such as portable document format (PDF), text format (TXT), rich text format (RTF), and Joint Photographic Experts Group format (JPEG);

(B) use compression schemes for photo, animation, video, and graphics; and

(C) distinguish among appropriate color, sound, and design principles such as consistency, repetition, alignment, proximity, and ratio of text to white space.

(12) Technology operations and concepts. The student demonstrates knowledge through various cloud and network technologies such as web-based interactive presentations, document sharing, and online scholarly databases. The student is expected to:

(A) use necessary vocabulary related to digital tools;

(B) retrieve and discriminate between authoritative and non-authoritative data sources; and

(C) adopt, adapt, and transfer prior knowledge to multiple situations when retrieving, manipulating, and creating original digital projects.

§127.193. Web Game Development (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: Web Design. This course is recommended for students in Grades 11 and 12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content including visual and performing arts and design, journalism, and entertainment services.

(3) Web Game Development will allow students to demonstrate creative thinking, develop innovative strategies, and use digital and communication tools necessary to develop fully functional online games. Web Game Development has career applications for many aspects of the game industry, including programming, art principles, graphics, web design, storyboarding and scripting, and business and marketing. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) research, evaluate, and demonstrate appropriate design of a web-based gaming site;

(B) illustrate ideas for web artwork from direct observations, experiences, and imagination;

(C) create original designs for web applications; and

(D) demonstrate the effective use of art media to create original web designs.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) understand and evaluate the use and appropriateness of webinars;

(B) examine, discuss, and summarize interactive online learning environments;

(C) distinguish between distance learning, virtual learning, and online learning;

(D) define and evaluate Voice over Internet Protocol (VoIP);

(E) identify and apply end-user, peer, self-, and professional evaluations; and

(F) work collaboratively to create functioning programs and gaming products.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) research, evaluate, and create web forms for database processing;

(B) identify the various programming languages and differentiate among the available web programming languages;

(C) research, evaluate, and summarize content management systems (CMS);

(D) differentiate between Common Gateway Interface (CGI) and computer-generated imagery (CGI);

(E) discuss, analyze, and summarize streaming media/content and game broadcasting;

(F) define and evaluate instant messaging (IM) within a game environment;

(G) analyze and discuss the history of gaming;

(H) discuss, analyze, compare, and contrast game types such as action, action-adventure, adventure, construction and management simulation, life simulation, massively multiplayer online role-playing (MMORPG), music, party, puzzle, role-playing, sports, strategy, trivia, and vehicle simulation;

(I) discuss, analyze, compare, and contrast gaming hardware, including console, personal computer, mobile, and web;

(J) compare and contrast web standards versus browser-specific languages;

(K) research, evaluate, and summarize e-commerce;

(L) investigate career opportunities in programming, gaming, art, design, business, and marketing;

(M) research the characteristics of existing gaming websites to determine local, state, national, and global trends;

(N) compare and contrast historical and contemporary styles of art as applied to website development;

(O) compare and contrast the use of the art elements of color, texture, form, line, space, and value and the art principles of emphasis, pattern, rhythm, balance, proportion, and unity in personal web game artwork and the web game artwork of others, using vocabulary accurately;

(P) describe general characteristics in artwork from a variety of cultures that influence web game design;

(Q) research and evaluate emerging technologies; and

(R) research and evaluate augmented reality (the supplementing of reality with computer-generated imagery) such as heads-up display and virtual digital projectors.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) select an appropriate web programming language based on given criteria;

(B) develop requirements for a database and determine the appropriate means to insert, delete, and modify records;

(C) develop Structured Query Language (SQL) statements to retrieve, insert, modify, and delete records in a database;

(D) design and create a flow diagram to plan a database, program, and game;

(E) define and identify proper use of gaming graphics, including skins, textures, environment appearance, environment mapping, raster graphics, and vector graphics;

(F) plan an animation that includes the movement of characters, camera movements, camera angles, user point of view, mechanics of motion, backgrounds, settings, ambient objects, and environments;

(G) compare and contrast two-dimensional (2-D) and three-dimensional (3-D) animation;

(H) develop and create a gaming storyboard and script that shows the overall development of a storyline;

(I) identify and implement graphic and game design elements, including color, environment, time to completion, difficulty, story complexity, character development, device control, backstory, delivery, and online player(s);

(J) design and create decision trees for a game's artificial intelligence engine;

(K) compare and contrast available audio formats for optimal delivery;

(L) identify the similarities and differences among platforms, including the application of coding on a personal computer, mobile device, and gaming console;

(M) research and identify existing online game development tools;

(N) evaluate and determine network requirements for the delivery of online games to end users; and

(O) create visual solutions by elaborating on direct observation, experiences, and imagination as they apply to original web design.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) explain game ratings and why games fit into certain ratings;

(B) assess games and game ratings in terms of their impact on societal interactions;

(C) model the ethical and legal acquisition of digital information following copyright laws, fair-use guidelines, and the student code of conduct;

(D) define and practice the ethical and legal acquisition, sharing, and use of files taking into consideration their primary ownership and copyright;

(E) examine original web game artwork to comply with appropriate behavioral, communication, and privacy guidelines, including ethics, online bullying and harassment, personal security, appropriate audience language, ethical use of files/file sharing, technical documentation, and online communities;

(F) interpret, evaluate, and justify artistic decisions in the creation of original art for web game design; and

(G) analyze original web game artwork and digital portfolios created by peers and others to form precise conclusions about formal qualities, historical and cultural contexts, intents, and meanings.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) create a website that includes:

(i) an interactive database with elements such as SQL statements, Extensible Markup Language (XML), and Open Database Connectivity (ODBC);

(ii) JavaScript; and

(iii) server-side processing, including Common Gateway Interface (CGI); bitmap and vector graphics; database creation, modification, and deletion; creation and maintenance of user accounts; user authentication; and documentation;

(B) create a fully functional online game that includes:

(i) multiple game levels with increasing difficulty;

(ii) high-score ranking;

(iii) physics, including center of mass, collision detection, lighting, shading, perspective, anatomy, motion blur, lens flare, and reflections;

(iv) art principles, including color theory, texture, balance, lighting, shading, skinning, and drawing;

(v) graphics resolution, including pixel depth and compression;

(vi) database creation, modification, and deletion;

(vii) creation and maintenance of user accounts;

(viii) user authentication;

(ix) artificial intelligence;

(x) game-level saving;

(xi) mathematical functions;

(xii) varying camera angles;

(xiii) VoIP for online web games; and

(xiv) documentation; and

(C) create a digital portfolio.

§127.224. Practicum in Animation (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Animation II and Animation II Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of the arts, audio/video technology, and communications industry. Building upon the concepts taught in Animation II and its corequisite Animation II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production animation products in a professional environment. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in production projects. The student is expected to:

(A) apply English language arts knowledge and skills by consistently demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, manuals, proposals, and other client-based documents; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by consistently demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) formulate, analyze, and organize oral and written information;

(C) formulate, analyze, interpret, and communicate information, data, and observations;

(D) create and deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills, including data gathering and interpretation independently and in groups; and

(B) employ interpersonal skills in groups to solve problems and make decisions.

(4) The student implements advanced technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for animation projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student implements advanced knowledge of the evolution and current trends of the animation industry. The student is expected to:

(A) summarize the history and evolution of the animation industry; and

(B) analyze the current trends of the animation industry.

(6) The student applies safety regulations. The student is expected to:

(A) consistently implement personal and workplace safety rules and regulations;

(B) recognize and resolve potential safety concerns; and

(C) follow emergency procedures.

(7) The student applies leadership characteristics to student organizations and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student implements ethical decision making and complies with laws regarding use of technology. The student is expected to:

(A) exhibit ethical conduct related to providing proper credit for ideas and privacy of sensitive content;

(B) discuss and apply copyright laws in relation to fair use and acquisition, trademark laws, and personal privacy laws and use digital information citing sources using established methods;

(C) model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(D) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and

(E) analyze the impact of the animation industry on society.

(9) The student demonstrates appropriate career-building characteristics and maintains a professional portfolio. The student is expected to:

(A) maintain a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities;

(C) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, and industry professional organizations; and

(D) examine employment opportunities in entrepreneurship.

(10) The student employs effective planning and time-management skills to enhance productivity. The student is expected to:

(A) employ effective planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student implements an advanced understanding of a client-based production in all stages of production. The student is expected to:

(A) determine and meet client needs by conducting client meetings to identify specific project requirements and target demographics; and

(B) develop a production proposal for client approval that includes a production schedule, research-based production costs, and appropriate delivery and distribution options.

(12) The student engages in pre-production activities for a successful execution of the project. The student is expected to:

(A) identify cast, crew, equipment, and location requirements;

(B) develop a budget with considerations for cast, crew, equipment, and location;

(C) analyze the script and storyboard processes; and

(D) assign team roles required for production.

(13) The student engages in production activities for successful execution of the project. The student is expected to:

(A) conduct a client meeting for presenting production strategies and implement client feedback;

(B) implement a coherent sequence of production events;

(C) use necessary equipment and crew for quality productions;

(D) demonstrate teamwork and knowledge of interpersonal skills with sensitivity to diversity;

(E) demonstrate appropriate use of editing systems; and

(F) make decisions appropriate for each element of production.

(14) The student engages in post-production activities for a successful output and distribution of the project. The student is expected to:

(A) make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(B) use various compression standards;

(C) research the appropriate delivery formats for the target audience;

(D) advise clients on optimal delivery options; and

(E) discuss distribution options with optimal project reach.

(15) The student practices business skills for freelance entrepreneurs. The student is expected to:

(A) implement standard freelance entrepreneur self-promotion techniques;

(B) develop proposals and standard billing and collection practices;

(C) research freelance entrepreneur start-up practices; and

(D) use technology applications common to freelance entrepreneurs.

(16) The student develops an understanding of professional employment strategies through practical experience in the arts, audio/video technology, and communications career field. The student is expected to:

(A) identify types and requirements of potential employers;

(B) use professional etiquette and protocol in situations such as making introductions, speaking on the phone, communicating via electronic devices, offering and receiving criticism, and making follow-up communications; and

(C) exhibit appropriate grooming and attire.

(17) The student develops an understanding of appropriate interview strategies in professional contexts. The student is expected to:

(A) employ appropriate verbal, nonverbal, and listening skills;

(B) use clear and appropriate communications to convey skill set to others;

(C) understand and apply federal laws regarding lawful employment interviews; and

(D) identify and use appropriate strategies for dealing with diverse individuals.

§127.225. Extended Practicum in Animation (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisites: Animation II and Animation II Lab. Corequisite: Practicum in Animation. This course must be taken concurrently with Practicum in Animation and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in animation span all aspects of the arts, audio/video technology, and communications industry. Building upon the concepts taught in Animation II and Animation II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production animation products in a professional environment. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) create and deliver formal and informal presentations effectively;

(D) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) demonstrate the transfer and adaptation of knowledge through the creation of original work.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to demonstrate an understanding of and consistently follow workplace safety rules and regulations.

(4) The student understands the professional, ethical, and legal responsibilities in animation. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) exhibit ethical conduct by providing proper credit for ideas and maintaining privacy of sensitive content;

(C) model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(D) practice safe, legal, and responsible use of information and technology; and

(E) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student engages in production activities for successful execution of an animation experience or project. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised animation experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) implement an appropriate coherent sequence of production events;

(D) demonstrate appropriate use of necessary equipment and crew for quality productions;

(E) demonstrate appropriate use of editing systems;

(F) monitor production schedule, research-based production costs, and delivery and distribution to ensure alignment with client needs and expectations;

(G) make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(H) implement the appropriate delivery formats for the target audience;

(I) analyze distribution options to achieve optimal project reach;

(J) demonstrate growth of technical skill competencies;

(K) evaluate strengths and weaknesses in technical skill proficiency; and

(L) collect representative work samples.

§127.226. Practicum in Audio/Video Production (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Audio/Video Production II and Audio/Video Production II Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio/video production span all aspects of the audio/video communications industry. Building upon the concepts taught in Audio/Video Production II and its corequisite Audio/Video Production II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying pre-production, production, and post-production audio and video products in a professional environment. This course may be implemented in an advanced audio/video or audio format. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in production projects. The student is expected to:

(A) apply English language arts knowledge and skills by consistently demonstrating use of content, technical concepts, and vocabulary; using correct grammar, punctuation, and terminology to write and edit documents; and composing and editing copy for a variety of written documents such as scripts, captions, schedules, reports, manuals, proposals, and other client-based documents; and

(B) apply mathematics knowledge and skills in invoicing and time-based mathematics by consistently demonstrating knowledge of arithmetic operations and applying measurement to solve problems.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) formulate, analyze, and organize oral and written information;

(C) formulate, analyze, interpret, and communicate information, data, and observations;

(D) create and deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills, including data gathering and interpretation independently and in groups; and

(B) employ interpersonal skills in groups to solve problems and make decisions.

(4) The student implements advanced technology applications and processes. The student is expected to:

(A) use technology applications such as social media, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for audio and video production projects; and

(B) use processes such as personal information management, file management, and file sharing.

(5) The student implements advanced knowledge of the evolution and current trends of the audio and video production industries. The student is expected to:

(A) summarize the history and evolution of audio and video production industries; and

(B) analyze the current trends of audio and video production industries.

(6) The student applies safety regulations. The student is expected to:

(A) consistently implement personal and workplace safety rules and regulations;

(B) recognize and resolve potential safety concerns; and

(C) follow emergency procedures.

(7) The student implements leadership characteristics in student organizations and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student implements ethical decision making and complies with laws regarding use of technology. The student is expected to:

(A) exhibit ethical conduct related to providing proper credit for ideas and privacy of sensitive content;

(B) discuss and apply copyright laws in relation to fair use and acquisition, trademark laws, personal privacy laws, and use of digital information by citing sources using established methods;

(C) model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(D) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and

(E) analyze the impact of the audio/video production industry on society.

(9) The student demonstrates appropriate career-building characteristics and maintains a professional portfolio. The student is expected to:

(A) maintain a career portfolio to document information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities;

(C) examine and employ professional networking opportunities such as career and technical student organizations, professional social media, and industry professional organizations; and

(D) examine employment opportunities in entrepreneurship.

(10) The student employs effective planning and time-management skills to enhance productivity. The student is expected to:

(A) employ effective planning and time-management skills to complete work tasks; and

(B) use technology to enhance productivity.

(11) The student implements an advanced understanding of a client-based production in all stages of production. The student is expected to:

(A) determine and meet client needs by conducting client meetings to identify specific project requirements and target demographics; and

(B) develop a production proposal for client approval that includes a production schedule, research-based production costs, and appropriate delivery and distribution options.

(12) The student engages in pre-production activities for a successful execution of the project. The student is expected to:

(A) identify cast, crew, equipment, and location requirements;

(B) develop a budget with considerations for cast, crew, equipment, and location;

(C) analyze the script and storyboard processes; and

(D) assign team roles required for production.

(13) The student engages in production activities for successful execution of the project. The student is expected to:

(A) conduct a client meeting for presenting production strategies and implement client feedback;

(B) implement a coherent sequence of production events;

(C) use necessary equipment and crew for quality productions;

(D) demonstrate teamwork and knowledge of interpersonal skills with sensitivity to diversity;

(E) demonstrate appropriate use of editing systems; and

(F) make decisions appropriate for each element of production.

(14) The student engages in post-production activities for a successful output and distribution of the project. The student is expected to:

(A) make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity;

(B) use various compression standards;

(C) research the appropriate delivery formats for the target audience;

(D) advise clients on optimal delivery options; and

(E) discuss distribution options with optimal project reach.

(15) The student practices business skills for freelance entrepreneurs. The student is expected to:

(A) implement standard freelance entrepreneur self-promotion techniques;

(B) develop proposals, standard billing, and collection practices;

(C) research freelance entrepreneur start-up practices; and

(D) use technology applications common to freelance entrepreneurs.

(16) The student develops an understanding of professional employment strategies through practical experience in the arts, audio/video technology, and communications career field. The student is expected to:

(A) identify types and requirements of potential employers;

(B) use professional etiquette and protocol in situations such as making introductions, speaking on the phone, communicating via electronic devices, offering and receiving criticism, and making follow-up communication; and

(C) exhibit appropriate grooming and attire.

(17) The student develops an understanding of appropriate interview strategies in professional contexts. The student is expected to:

(A) employ appropriate verbal, nonverbal, and listening skills;

(B) use clear and appropriate communications to convey skill set to others;

(C) understand and apply federal laws regarding lawful employment interviews; and

(D) identify and use appropriate strategies for dealing with diverse individuals.

§127.227. Extended Practicum in Audio/Video Production (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisites: Audio/Video Production II and Audio/Video Production II Lab. Corequisite: Practicum in Audio/Video Production. This course must be taken concurrently with Practicum in Audio/Video Production and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in audio/video production span all aspects of the audio/video communications industry. Building upon the concepts taught in Audio/Video Production II and Audio/Video Production II Lab, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an increasing understanding of the industry with a focus on applying preproduction, production, and post-production audio and video products in a professional environment. This course may be implemented in an advanced audio/video or audio format. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) create and deliver formal and informal presentations effectively; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions; and

(B) demonstrate the transfer and adaptation of knowledge through the creation of original work.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow workplace safety rules and regulations; and

(B) recognize and resolve potential safety concerns.

(4) The student understands the professional, ethical, and legal responsibilities in audio/video production. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) exhibit ethical conduct by providing proper credit for ideas and maintaining privacy of sensitive content;

(C) model respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(D) practice safe, legal, and responsible use of information and technology;

(E) show integrity by choosing the ethical course of action when making decisions; and

(F) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in an audio/video production experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised audio/video production experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate an advanced understanding of a client-based production in all stages of production;

(D) engage in pre-production activities such as identifying cast, crew, equipment, and location requirements; developing a budget; and analyzing script and storyboard processes for successful execution of a project;

(E) engage in production activities for successful execution of the project, including making decisions appropriate for each element of a production;

(F) engage in post-production activities such as making necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity, and researching the appropriate delivery formats for the target audience for a successful output and distribution of a project;

(G) demonstrate growth of technical skill competencies;

(H) evaluate strengths and weaknesses in technical skill proficiency; and

(I) collect representative work samples.

§127.228. Practicum in Printing and Imaging Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Printing and Imaging Technology II and Printing and Imaging Technology II Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the printing industry with a focus on finishing and bindery operations and customer-based projects. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in printing and imaging projects. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student implements advanced communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present information formally and informally;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student implements advanced technology applications. The student is expected to use personal information manage-

ment, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for printing and imaging projects.

(5) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations; and

(B) follow emergency procedures.

(6) The student implements leadership characteristics in student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(7) The student implements ethical decision making and complies with laws regarding use of technology in printing. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) apply copyright laws in relation to fair use and duplication of materials;

(C) model respect for intellectual property;

(D) demonstrate proper etiquette and knowledge of acceptable use policies; and

(E) understand Creative Commons laws, including all licensing.

(8) The student implements career-building characteristics. The student is expected to:

(A) maintain, update, and present a portfolio with information such as work experiences, licenses, certifications, and work samples;

(B) demonstrate skills in evaluating and comparing employment opportunities; and

(C) examine employment opportunities in entrepreneurship.

(9) The student implements technical skills for efficiency. The student is expected to employ planning and time-management skills and tools to enhance results and complete work tasks.

(10) The student implements an advanced technical understanding of professional printing and imaging. The student is expected to:

(A) understand printing systems and their uses;

(B) manage the printing process;

(C) prepare customer documents;

(D) use appropriate printing processes;

(E) use binding processes, including cutting, folding, and trimming;

(F) calculate paper counts from a stock sheet;

(G) demonstrate folding a variety of print pieces, adapting equipment as needed;

(H) demonstrate saddle stitch, perfect bind, and flat stitching in various printed materials;

(I) demonstrate padding press operations;

(J) use appropriate embossing, foil stamping, die cutting, and laminating samples;

(K) print appropriate paper labels, ink jet labels, and bulk forms;

(L) demonstrate knowledge of postal regulations related to packages, contents, sizes, and destinations; and

(M) meet customer needs with regard to labeling, packaging, and shipping according to regulatory standards.

§127.229. Extended Practicum in Printing and Imaging Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisites: Printing and Imaging Technology II and Printing and Imaging Technology II Lab. Corequisite: Practicum in Printing and Imaging Technology. This course must be taken concurrently with Practicum in Printing and Imaging Technology and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in printing span all aspects of the industry, including prepress, press, and finishing and bindery operations. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the printing industry with a focus on finishing and bindery operations and customer-based projects. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) present information formally and informally effectively;

(C) apply active listening skills to obtain and clarify information; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to demonstrate an understanding of and consistently follow workplace safety rules and regulations.

(4) The student understands the professional, ethical, and legal responsibilities in printing and imaging technology. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) exhibit ethical conduct by maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(C) apply copyright laws in relation to fair use and duplication of materials in a consistent manner;

(D) apply Creative Commons laws, including all licensing; and

(E) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student implements an advanced technical understanding of professional printing and imaging. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised printing and imaging technology experience;

(B) practice use of various printing systems;

(C) demonstrate use of appropriate printing processes with increased fluency;

(D) demonstrate use of binding processes such as cutting, folding, and trimming with increased fluency;

(E) demonstrate folding of a variety of print pieces by adapting equipment as needed;

(F) use appropriate embossing, foil stamping, die cutting, and laminating samples with increased fluency;

(G) meet customer needs for labeling, packaging, and shipping according to regulatory standards;

(H) develop advanced technical knowledge and skills related to the student's occupational objective;

(I) demonstrate growth of technical skill competencies;

(J) evaluate strengths and weaknesses in technical skill proficiency; and

(K) collect representative work samples.

§127.230. Practicum in Commercial Photography (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Commercial Photography I and Commercial Photography I Lab along with teacher recommendation. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the commercial photography

industry with a focus on producing, promoting, and presenting professional quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in commercial photography. The student is expected to:

(A) apply English language arts knowledge and skills in accordance with industry standards to a variety of written documents; and

(B) apply mathematics knowledge and skills in accordance with industry standards to solve a problem.

(2) The student applies professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) present information formally and informally;

(E) apply active listening skills to obtain and clarify information;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student understands and examines problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student is expected to use personal information management, email, Internet, writing and publishing, presentation, and spreadsheet or database applications for commercial photography projects.

(5) The student applies knowledge of commercial photography systems. The student is expected to analyze and summarize the history and evolution of the commercial photography field.

(6) The student applies safety regulations. The student is expected to:

(A) implement personal and workplace safety rules and regulations in a photography studio and lab; and

(B) follow emergency procedures.

(7) The student applies leadership characteristics to student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and complies with laws regarding use of technology in commercial photography. The student is expected to:

(A) demonstrate an understanding of ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and duplication of images;

(C) model respect for intellectual property when manipulating, morphing, and editing digital images; and

(D) demonstrate proper etiquette and knowledge of acceptable use policies, including Creative Commons laws and licensing.

(9) The student develops career-building characteristics. The student is expected to:

(A) maintain and update portfolio to document information such as work experiences, licenses, certifications, and work samples; and

(B) demonstrate skills in evaluating and comparing employment opportunities.

(10) The student is expected to employ planning and time-management skills to complete work tasks such as creating quotes and budgeting. The student is expected to:

(A) employ planning and time-management skills to complete work tasks; and

(B) demonstrate skills in budgeting and creating quotes for freelance or contract projects.

(11) The student develops an increased understanding of commercial photography. The student is expected to:

(A) create photographs for defined purposes;

(B) apply the elements and principles of art to a variety of commercial photography projects;

(C) demonstrate the principles of commercial photography such as working with clients, interpreting client instructions, developing production schedules, and delivering products in a competitive market;

(D) demonstrate the use of appropriate cameras and lenses;

(E) apply appropriate photographic composition and layout principles;

(F) demonstrate appropriate digital black and white and color photography;

(G) apply effective photographic lighting techniques, including three point, studio, portraiture, and product;

(H) produce professional quality photographs;

(I) use the most appropriate types of photographic paper for projects;

(J) use the most appropriate solutions for mounting, matting, or framing photographs;

(K) demonstrate use of appropriate, current, and industry-standard production processes to produce photographs;

(L) evaluate photographs using principles of art, commercial photography standards, and critical-thinking skills; and

(M) demonstrate use of appropriate resolution and digital file formats.

§127.231. Extended Practicum in Commercial Photography (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisites: Commercial Photography I and Commercial Photography I Lab along with teacher recommendation. Corequisite: Practicum in Commercial Photography. This course must be taken concurrently with Practicum in Commercial Photography and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in commercial photography span all aspects of the industry from setting up a shot to delivering products in a competitive market. In addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the commercial photography industry with a focus on producing, promoting, and presenting professional quality photographs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) present information formally and informally effectively;

(D) apply active listening skills to obtain and clarify information; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to demonstrate understanding of and consistently follow workplace safety rules and regulations.

(4) The student understands the professional, ethical, and legal responsibilities in commercial photography. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) practice ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a commercial photography experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised commercial photography experience;

(B) demonstrate the use of appropriate cameras and lenses with increased proficiency;

(C) apply appropriate photographic composition and layout principles with increased fluency;

(D) apply effective photographic lighting techniques such as three point, studio, portraiture, and product with increased fluency;

(E) produce professional-quality photographs;

(F) demonstrate use of the most appropriate types of photographic paper for projects;

(G) demonstrate use of the most appropriate solutions for mounting, matting, or framing photographs;

(H) demonstrate use of appropriate, current, and industry-standard production processes to produce photographs;

(I) demonstrate use of appropriate resolution and digital file formats;

(J) demonstrate growth of technical skill competencies;

(K) evaluate strengths and weaknesses in technical skill proficiency; and

(L) collect representative work samples.

§127.232. Practicum in Fashion Design (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is for students in Grades 11 and 12. Prerequisite: Fashion Design II and Fashion Design II Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the business aspects of fashion, with emphasis on promotion and retailing. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in fashion, textile, and apparel projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information, data, and observations;

(D) deliver formal and informal presentations;

(E) apply active listening skills to obtain and clarify information;

(F) communicate with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups; and

(B) employ interpersonal skills in groups to solve problems.

(4) The student implements advanced technology applications. The student is expected to use personal information management, email, Internet, and industry programs for fashion, textiles, and apparel projects.

(5) The student implements advanced knowledge of fashion, textile, and apparel systems. The student evaluates the history of the fashion, textiles, and apparel field. The student is expected to compare fashion history relative to current fashions trends.

(6) The student applies safety regulations. The student is expected to implement personal and workplace safety rules and procedures.

(7) The student implements leadership characteristics in classroom and professional settings. The student is expected to:

(A) employ leadership skills to accomplish collective goals;

(B) employ practices for effective working relationships such as providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(C) conduct and participate in meetings using parliamentary procedure; and

(D) employ mentoring skills to inspire others.

(8) The student applies ethical decision making and complies with legal practices related to fashion, textiles, and apparel. The student is expected to:

(A) exhibit ethical conduct; and

(B) apply copyright laws.

(9) The student implements technical skills for efficiency. The student is expected to employ planning and time-management skills to complete work tasks.

(10) The student describes fundamentals of fashion buying. The student is expected to:

(A) explain processes for retail buying;

(B) identify wholesale market resources;

(C) compare various apparel markets;

(D) analyze how timing and pricing of fashion apparel and accessories are determined;

(E) analyze the price of a fashion product;

(F) describe various types of retail outlets;

(G) describe how offshore sourcing impacts fashion retailing; and

(H) compose a scenario plan for retail pricing, sales, inventory, and purchasing.

(11) The student describes the relationship between marketing and the fashion industry. The student is expected to:

(A) explain the marketing concept;

(B) relate marketing functions to the fashion industry;

(C) explain how each component of the marketing mix contributes to successful fashion marketing;

(D) explain the importance of target markets;

(E) describe advantages and disadvantages of market segmentation and mass marketing;

(F) research trends and emerging technologies affecting fashion marketing;

(G) determine examples of niche marketing;

(H) describe cultural and societal influences on the fashion market; and

(I) describe how international marketing has affected the fashion industry.

(12) The student develops, implements, and evaluates a promotional plan. The student is expected to:

(A) identify components of the promotional mix such as advertising, visual merchandising, and personal selling;

(B) demonstrate visual merchandising techniques for fashion goods, services, or ideas;

(C) analyze a promotional plan for effectiveness;

(D) describe deceptive practices in fashion promotion; and

(E) employ ethical practices in promotional activities.

(13) The student applies marketing techniques when assisting with promotional activities. The student is expected to:

(A) describe various types of business promotion strategies;

(B) classify types of customers and their motives for buying textile and apparel products;

(C) describe roles of public relations and publicity in product promotion;

(D) explain the use of promotional activities to market textile and apparel products and services;

(E) plan special fashion events such as fashion shows, trunk shows, retail shows, and educational events;

(F) create and develop a fashion show theme;

(G) develop a scale drawing to illustrate fashion show sets and staging;

(H) describe all fashion show responsibilities; and

(I) write press releases to publicize promotional activities.

(14) The student creates product displays using the principles of design. The student is expected to:

(A) identify components used in developing displays;

(B) determine ways in which design elements and principles are used in the creation of displays;

(C) describe types and uses of interior and exterior displays; and

(D) create window or other displays of fashion and apparel products.

(15) The student demonstrates effective customer service. The student is expected to:

(A) determine factors that promote quality customer relations;

(B) evaluate the impact of cultural diversity on customer relations;

(C) exhibit skills needed for effective customer service;

(D) create solutions to specific customer issues; and

(E) examine the role of selling fashion products in retail.

(16) The student identifies wholesale settings. The student is expected to:

(A) analyze motives for consumer fashion purchases;

(B) describe qualities of an effective salesperson;

(C) apply appropriate fashion vocabulary in selling situations; and

(D) demonstrate effective sales techniques from customer approach to closure.

(17) The student summarizes important business procedures in fashion retailing. The student is expected to:

(A) explain methods a business uses to control risks such as surveillance, safety training, and loss control;

(B) explain the use of inventory information such as preparing financial reports and making buying decisions;

(C) demonstrate cash and credit transaction methods;

(D) analyze data used to make accurate forecasts;

(E) demonstrate knowledge of the fashion buying process such as preparing a buying plan, completing purchase orders, and processing invoices;

(F) examine operational costs such as markup, markdown, cash flow, and other factors affecting profit; and

(G) demonstrate procedures for reporting and handling accidents, safety, and security incidents.

§127.233. Extended Practicum in Fashion Design (One Credit), Adopted 2015.

(a) Implementation

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisite: Fashion Design II and Fashion Design II Lab. Corequisite: Practicum in Fashion Design. This course must be taken concurrently with Practicum in Fashion Design and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster focuses on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in fashion span all aspects of the textile and apparel industries. Within this context, in addition to developing advanced technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop an advanced technical understanding of the business aspects of fashion, with emphasis on promotion and retailing. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) apply active listening skills to obtain and clarify information;

(D) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate procedures for reporting and handling accidents, safety, and security incidents.

(4) The student understands the professional, ethical, and legal responsibilities in fashion design. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) practice ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(C) employ ethical practices in promotional activities; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a fashion design experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised fashion design experience;

(B) compose a scenario plan for retail pricing, sales, inventory, and purchasing;

(C) plan special fashion events such as fashion shows, trunk shows, retail shows, and educational events;

(D) create product displays using the principles of design;

(E) implement aspects of the fashion buying process such as preparing a buying plan, completing purchase orders, and processing invoices;

(F) demonstrate growth of technical skill competencies;

(G) evaluate strengths and weaknesses in technical skill proficiency; and

(H) collect representative work samples.

§127.234. Practicum in Graphic Design and Illustration (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Graphic Design and Illustration II and Graphic Design and Illustration II Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industry. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop a technical understanding of the industry with a focus on skill proficiency. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic knowledge and skills in art and design projects. The student is expected to:

(A) apply English language arts knowledge by demonstrating skills such as correct use of content, technical concepts, vocabulary, grammar, punctuation, and terminology to write and edit a variety of documents; and

(B) apply mathematics knowledge and skills such as using whole numbers, decimals, fractions, and knowledge of arithmetic operations.

(2) The student implements advanced professional communications strategies. The student is expected to:

(A) adapt language such as structure and style for audience, purpose, situation, and intent;

(B) organize oral and written information;

(C) interpret and communicate information;

(D) deliver formal and informal presentations;

(E) apply active listening skills;

(F) listen to and speak with diverse individuals; and

(G) exhibit public relations skills to increase internal and external customer/client satisfaction.

(3) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills, including data gathering and interpretation, independently and in groups to solve problems and make decisions; and

(B) employ interpersonal skills in groups to solve problems and make decisions.

(4) The student implements advanced technology applications. The student is expected to use personal information management, email, Internet, writing and publishing, and presentation applications for graphic design and illustration projects.

(5) The student implements advanced knowledge of design systems. The student is expected to analyze and summarize the history and evolution of the commercial art and design field.

(6) The student applies cyber safety procedures. The student is expected to implement personal and professional safety rules and regulations.

(7) The student implements leadership characteristics in student leadership and professional development activities. The student is expected to:

(A) employ leadership skills to accomplish goals and objectives by analyzing the various roles of leaders within organizations, exhibiting problem-solving and management traits, describing effective leadership styles, and participating in civic and community leadership and teamwork opportunities to enhance skills;

(B) employ teamwork and conflict-management skills to achieve collective goals;

(C) establish and maintain effective working relationships by providing constructive praise and criticism, demonstrating sensitivity to and value for diversity, and managing stress and controlling emotions;

(D) prepare for meetings by developing goals and objectives to achieve within a scheduled time and producing agendas;

(E) conduct and participate in meetings to accomplish work tasks by achieving goals and objectives within a scheduled time; producing meeting minutes, including decisions and next steps; and using parliamentary procedures, as needed; and

(F) employ mentoring skills to inspire and teach others.

(8) The student applies ethical decision making and complies with laws regarding use of technology. The student is expected to:

(A) exhibit ethical conduct related to interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(B) discuss and apply copyright laws in relation to fair use and acquisition and use of digital information using established methods to cite sources;

(C) model respect of intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(D) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and

(E) analyze and identify the impact of the advertising and visual communication design industry on society.

(9) The student applies effective planning and time-management skills. The student is expected to employ tools to enhance results and complete work tasks.

(10) The student uses advanced graphic design and illustration methods and skills. The student is expected to:

(A) interpret, evaluate, and justify design decisions;

(B) conduct verbal or written critiques of design projects; and

(C) identify and apply art elements and principles to designs and illustrations.

(11) The student employs a creative design process to create professional quality, two- or three-dimensional projects. The student is expected to:

(A) create designs for defined applications;

(B) use appropriate elements of design;

(C) use appropriate design principles and typography;

(D) use appropriate composition;

(E) use anatomically appropriate figure drawing;

(F) use appropriate perspective;

(G) use the most effective color choices in projects; and

(H) use appropriate printing concepts.

§127.235. Extended Practicum in Graphic Design and Illustration (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Arts, Audio Visual Technology, and Communications Career Cluster. Prerequisites: Graphic Design and Illustration II and Graphic Design and Illustration II Lab. Corequisite: Practicum in Graphic Design and Illustration. This course must be taken concurrently with Practicum in Graphic Design and Illustration and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Arts, Audio Visual Technology, and Communications Career Cluster is focused on careers in designing, producing, exhibiting, performing, writing, and publishing multimedia content, including visual and performing arts and design, journalism, and entertainment services.

(3) Careers in graphic design and illustration span all aspects of the advertising and visual communications industry. Within this context, in addition to developing technical knowledge and skills needed for success in the Arts, Audio Visual Technology, and Communications Career Cluster, students will be expected to develop a technical understanding of the industry with a focus on skill proficiency. Instruction may be delivered through lab-based classroom experiences or career preparation opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information;

(C) apply active listening skills to obtain and clarify information; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to demonstrate understanding of and consistently follow workplace safety rules and regulations.

(4) The student understands the professional, ethical, and legal responsibilities in graphic design and illustration. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) practice safe, responsible, and legal behavior while using technology tools and resources;

(C) practice ethical conduct when interacting with others such as maintaining client confidentiality and privacy of sensitive content and providing proper credit for ideas;

(D) apply copyright laws in relation to fair use and acquisition and use of digital information using established methods to cite sources;

(E) practice respect for intellectual property when manipulating, morphing, and editing graphics, video, text, and sound;

(F) demonstrate proper etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranet; and

(G) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a graphic design and illustration experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised graphic design and illustration experience;

(B) interpret, evaluate, and justify design decisions;

(C) identify and apply art elements and principles to designs and illustrations with increased fluency;

(D) employ a creative design process to create professional-quality, two- or three-dimensional projects;

(E) demonstrate growth of technical skill competencies;

(F) evaluate strengths and weaknesses in technical skill proficiency; and

(G) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER F. BUSINESS, MARKETING, AND FINANCE

19 TAC §§127.241 - 127.260, 127.264 - 127.266, 127.268, 127.294 - 127.300

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.241. Principles of Business, Marketing, and Finance (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-11. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Principles of Business, Marketing, and Finance, students gain knowledge and skills in economies and private enterprise systems, the impact of global business, the marketing of goods and services, advertising, and product pricing. Students analyze the sales process and financial management principles. This course allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in business, marketing, and finance.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student describes the characteristics of business. The student is expected to:

(A) explain the principles of supply and demand;

(B) differentiate between goods and services;

(C) identify the types of business;

(D) compare the different forms of ownership;

(E) examine the organizational structure and functions of business;

(F) interpret the nature of balance sheets and income statements; and

(G) identify business cycles.

(2) The student defines ethics in business. The student is expected to:

(A) distinguish between ethical and unethical business practices; and

(B) contrast ethical, moral, and legal choices that relate to the decision-making process in business situations.

(3) The student differentiates between the types of economic systems with emphasis on the private enterprise system and the U.S. economy. The student is expected to:

(A) compare and contrast the types of economic systems, including traditional, centrally planned, market, and mixed economies;

(B) summarize the characteristics of the private enterprise system; and

(C) identify factors affecting business profits, revenues, and expenses.

(4) The student relates to the impact of international business on the U.S. economy. The student is expected to:

(A) explain the role of business in a global society;

(B) compare domestic and world trade; and

(C) explain the impact of imports and exports on the U.S. economy.

(5) The student identifies the role and impact of government, the legal system, and organized labor in business. The student is expected to:

(A) differentiate among the roles of government in business;

(B) describe types of activities performed by governments in business;

(C) ascertain the role of the legal system in business; and

(D) explain the role of organized labor in society.

(6) The student classifies types of businesses that market goods and services. The student is expected to:

(A) explain the importance of different marketing strategies for goods versus services;

(B) define business and industry terms such as producers, raw-goods producers, manufacturers, builders, trade industries, retailers, wholesalers, and service businesses;

(C) identify types of retailers;

(D) explain the role of retailers in a private enterprise system;

(E) identify examples of wholesalers; and

(F) describe the role of wholesalers in a private enterprise system.

(7) The student analyzes cost and profit relationships in finance. The student is expected to:

(A) explain the concept of productivity;

(B) analyze the impact of specialization and division of labor on productivity; and

(C) explain the concept of organized labor and business.

(8) The student understands the fundamental principles of money. The student is expected to:

(A) evaluate forms of financial exchange, including cash, credit, debit, and electronic funds transfer;

(B) identify types of currency, including paper money, coins, banknotes, government bonds, and treasury notes;

(C) list functions of money such as medium of exchange, unit of measure, and store of value;

(D) summarize the purposes and importance of credit; and

(E) explain legal responsibilities associated with financial exchanges.

(9) The student demonstrates an understanding of personal financial management. The student is expected to:

(A) explain the importance of providing accurate information;

(B) calculate gross and net pay;

(C) simulate opening and maintaining various types of bank accounts;

(D) reconcile bank statements;

(E) compare the advantages and disadvantages of different types of banking services;

(F) examine investment growth by developing a personal investment plan; and

(G) prepare an individual income tax return.

(10) The student explains the importance of marketing as well as the functions of marketing. The student is expected to:

(A) define marketing;

(B) understand how marketing is related to other functions of business;

(C) explain the marketing concept; and

(D) describe marketing functions and its related activities.

(11) The student understands the scope of market identification. The student is expected to:

(A) explain the concept of market and market identification;

(B) identify market segments;

(C) explain the difference in market segmentation and mass marketing;

(D) define and explain the importance of target markets; and

(E) identify a target market for a product or service using market segmentation.

(12) The student understands the importance of an effective marketing mix. The student is expected to:

(A) explain the concept of marketing strategies;

(B) define each component of the marketing mix;

(C) identify examples of an effective marketing mix;

(D) create an effective marketing mix for a product or service; and

(E) explain the role of participation as a key element of marketing.

(13) The student identifies career opportunities within the Business, Marketing, and Finance Career Cluster and formulates a career plan. The student is expected to:

(A) analyze individual goals and interests;

(B) determine individual talents, abilities, and skills; and

(C) develop an individual career plan.

§127.242. Touch System Data Entry (One-Half Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Touch System Data Entry, students apply technical skills to address business applications of emerging technologies. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students will need to apply touch system data entry for production of business documents.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills required by business and industry. The student is expected to:

(A) communicate effectively with others using oral and written skills;

(B) demonstrate collaboration skills through teamwork;

(C) demonstrate professionalism by conducting oneself in a manner appropriate for the profession and workplace;

(D) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(E) comply with all applicable rules, laws, and regulations; and

(F) demonstrate time-management skills by prioritizing tasks, following schedules, and tending to goal-relevant activities in a way that uses time wisely and optimizes efficiency and results.

(2) The student applies the proper keyboarding technique to input data when using the computer. The student is expected to:

(A) demonstrate correct posture and position while conducting data entry;

(B) display proper care and operation of equipment used;

(C) apply the correct touch-system techniques for operating alphabetic keys;

(D) demonstrate the correct touch-system techniques for operating numeric and symbol keys;

(E) use the correct touch-system techniques for operating the ten-key numeric pad; and

(F) correctly use the command and function keys.

(3) The student applies correct techniques for the touch-system of operating the keyboard to develop speed and accuracy. The student is expected to:

(A) demonstrate improvement in speed and accuracy;

(B) develop the ability to proofread and edit writing for proper voice, tense, and syntax, assuring that it conforms to standard English, when appropriate;

(C) use the backspace key to correct errors;

(D) compose a variety of business documents under timed situations; and

(E) apply speed and accuracy in production of documents.

(4) The student formats and prints documents such as personal and business letters, short reports, outlines, and compositions. The student is expected to:

(A) demonstrate the ability to work from printed, rough-draft, statistical, handwritten, and unarranged material;

(B) demonstrate the ability to compose at the keyboard;

(C) demonstrate the ability to proofread;

(D) identify the parts of a personal and business letter;

(E) format personal and business letters and envelopes;

(F) format all pages of a report, including a title page, reference page, and bibliography;

(G) format an outline; and

(H) demonstrate mastery of basic grammar, including using punctuation marks, numbers and symbols, and capitalization correctly.

(5) The student prepares business documents using effective communication. The student is expected to:

(A) interpret and follow directions to produce documents;

(B) demonstrate proficiency in business English, spelling, and proofreading;

(C) identify and apply correct format for business correspondence and documents; and

(D) demonstrate concepts and processes to employ the appropriate steps in document production.

(6) The student improves level of proficiency in producing complex business documents. The student is expected to:

(A) refine work habits; and

(B) improve techniques, speed, and accuracy in document production.

(7) The student solves problems using document processing skills. The student is expected to:

(A) identify criteria for selection and evaluation of word-processing software;

(B) analyze proper placement, format, and priority of completion;

(C) produce business correspondence such as letters, memos, emails, press releases, announcements, tables, reports, legal documents, and business forms; and

(D) prepare and distribute personalized correspondence using electronic mail.

(8) The student develops the technology and social skills necessary to work in an office environment. The student is expected to:

(A) create and present a visual and oral report using text and graphics;

(B) relate the social ramifications of computer applications to privacy, values, and ethics;

(C) enhance overall office productivity by responsible use of computer systems;

(D) develop human-relation skills for working in a team environment; and

(E) participate in student leadership activities.

§127.243. Business Law (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Business Law is designed for students to analyze various aspects of the legal environment, including ethics, the judicial system, contracts, personal property, sales, negotiable instruments, agency and employment, business organization, risk management, and real property.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student defines ethics in business. The student is expected to:

(A) distinguish between ethical and unethical business practices; and

(B) contrast ethical, moral, and legal choices that relate to the decision-making process in business situations.

(2) The student identifies the different types of law, courts, and regulations in the judicial system. The student is expected to:

(A) identify the concepts of civil and criminal law;

(B) explain the different types of courts and traditional court procedures;

(C) differentiate between business torts and crimes; and

(D) comprehend the rationale for governmental regulations of business activities.

(3) The student identifies the principles of contracts in business. The student is expected to:

(A) explain the classes of contracts;

(B) cite methods of offer and acceptance;

(C) explain the different capacities to contract;

(D) examine the concepts of consideration;

(E) describe defective agreements;

(F) describe illegal agreements; and

(G) research contemporary cases dealing with contract law using appropriate online technology.

(4) The student explains personal property. The student is expected to:

(A) contrast real property with personal property;

(B) analyze the nature of personal property;

(C) recognize the different types of bailments and obligations and rights under each type; and

(D) research cases dealing with personal property using appropriate online technology.

(5) The student identifies the concept of sales in the context of business law. The student is expected to:

(A) identify the nature of goods and services;

(B) explain the formalities of sale;

(C) characterize the transfer of title and risks in sales contracts;

(D) identify and explain the types and categories of warranties, product liability, and consumer protection; and

(E) research cases dealing with contract sales using appropriate online technology.

(6) The student researches negotiable instruments. The student is expected to:

(A) explain the nature of negotiable instruments;

(B) identify the essentials of negotiability;

(C) explain promissory notes and drafts;

(D) distinguish between negotiation and discharge;

(E) assess the liabilities of the holders in due course;

(F) identify the defenses in dealing with negotiable instruments; and

(G) research cases dealing with negotiable instruments using appropriate online technology.

(7) The student analyzes the concepts of agency and employment. The student is expected to:

(A) summarize the nature and creation of an agency;

(B) explain the operation and termination of an agency;

(C) recognize the nature of employer and employee relations;

(D) explain employee rights;

(E) identify the tenets of labor legislation; and

(F) research cases dealing with employment law using appropriate online technology.

(8) The student identifies the different types of business organization. The student is expected to:

(A) explain a sole proprietorship;

(B) explain the creation and operation of a partnership;

(C) discuss the nature and creation of a corporation;

(D) depict the ownership of a corporation; and

(E) describe the management and dissolution of a corporation.

(9) The student explains risk-management instruments. The student is expected to:

(A) identify the principles of insurance;

(B) review the types of insurance;

(C) recognize security devices such as fidelity bonds and securities;

(D) discuss the appropriateness and categories of bankruptcy; and

(E) research contemporary cases dealing with risk-bearing devices using appropriate online technology.

(10) The student describes the legal contexts of real property. The student is expected to:

(A) explain the nature of real property;

(B) establish the proper methods for the transfer of real property;

(C) describe the different types of real estate mortgages;

(D) review contemporary landlord-tenant law;

(E) explain wills, inheritances, and trusts; and

(F) research cases dealing with real estate law using appropriate online technology.

(11) The student knows how to use self-development techniques and interpersonal skills to accomplish legal tasks and solve cases. The student is expected to:

(A) identify and practice effective interpersonal skills involving situations with coworkers, supervisors, and clients;

(B) identify and practice effective team-building skills involving situations with coworkers, supervisors, and clients; and

(C) participate in leadership and career development activities.

§127.244. Business English (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: English III Recommended Prerequisite: Touch Systems Data Entry. This course satisfies the high school advanced English graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Business English, students enhance communication and research skills by applying them to the business environment, in addition to exchanging information and producing properly formatted business documents using emerging technology.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) communicate effectively with others using oral and written skills;

(B) demonstrate collaboration skills through teamwork;

(C) demonstrate professionalism by conducting oneself in a manner appropriate for the profession and workplace;

(D) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(E) show integrity by choosing the ethical course of action and comply with all applicable rules, laws, and regulations; and

(F) demonstrate time-management skills by prioritizing tasks, following schedules, and tending to goal-relevant activities in a way that uses time wisely and optimizes efficiency and results.

(2) The student prepares for effective communication skills. The student is expected to:

(A) organize ideas logically and sequentially;

(B) locate and interpret written information;

(C) distinguish communicated fact from opinion by identifying key words;

(D) interpret visual materials such as charts, graphs, pictures, and maps and translate the information into textual form;

(E) employ precise language to communicate ideas clearly and concisely; and

(F) organize ideas in writing in a coherent, logical progression.

(3) The student employs appropriate research techniques to produce effective business communication. The student is expected to:

(A) incorporate information from printed copies and electronic resources and references;

(B) locate and paraphrase secondary sources;

(C) document secondary sources;

(D) design, conduct, and analyze the results of a survey;

(E) conduct interviews to obtain resource materials; and

(F) create a business project incorporating data imported from various sources.

(4) The student exchanges information via telecommunications such as email, images, social media, and other online information services with appropriate supervision. The student is expected to:

(A) evaluate which telecommunications methods are most appropriate to a given situation; and

(B) apply appropriate business ethics and correct etiquette when using telecommunications.

(5) The student illustrates proficiency in interpersonal communication. The student is expected to:

(A) develop professional vocabulary skills;

(B) execute effective oral presentations;

(C) deliver an effective business presentation such as sales, reports, and proposals;

(D) apply effective communication techniques when using the telephone and different forms of technology;

(E) demonstrate the ability to listen by writing summaries of presentations and oral conversations;

(F) display active listening through oral feedback;

(G) follow oral and written directions;

(H) demonstrate the ability to give oral instructions for completing a simple task; and

(I) apply proper business interviewing techniques in various situations such as one-on-one, group, and committee interviews.

(6) The student develops communication skills necessary to address a changing business environment. The student is expected to:

(A) describe the communication process;

(B) identify barriers to effective communication;

(C) assess the ethical and legal implications of messages;

(D) discern appropriate channels for transmitting messages;

(E) interpret nonverbal communication in various activities;

(F) illustrate the impact of nonverbal communication on the total communication process;

(G) identify ways to improve communication in organizations; and

(H) discuss potential communication problems in multicultural business environments.

(7) The student produces business documents using current and emerging technology. The student is expected to:

(A) format business documents;

(B) demonstrate basic writing skills through assigned tasks;

(C) compose positive, negative, and persuasive messages;

(D) compose business letters and memos using the appropriate organizational strategies;

(E) produce a business report containing text and graphics; and

(F) develop a business newsletter.

(8) The student documents technical knowledge and skills. The student is expected to:

(A) prepare a professional electronic portfolio that includes information such as:

(i) attainment of technical skill competencies;

(ii) recognitions, awards, and scholarships;

(iii) extended learning experiences such as community service and active participation in career and technical student organizations;

(iv) sample letter of application;

(v) resume;

(vi) samples of work; and

(vii) teacher recommendations; and

(B) present the portfolio to interested stakeholders.

(9) The student understands how to collect and use information in procedural texts and documents. The student is expected to:

(A) draw conclusions about how the patterns of organization and hierarchic structures support the understandability of text;

(B) evaluate the structures of text such as format or headers for their clarity and organizational coherence; and

(C) evaluate the structures of text for the effectiveness of their graphic representations.

(10) The student uses comprehension skills to analyze how words, images, graphics, and sounds work together in various forms to impact meaning. The student applies the knowledge and skills in paragraphs (2)-(9) of this subsection with greater depth in increasingly more complex texts. The student is expected to:

(A) evaluate how messages presented in media reflect social and cultural views in ways different from traditional texts;

(B) evaluate the interactions of different techniques used in multi-layered media such as layout, pictures, typeface in print media, images, text, or sound in electronic journalism;

(C) evaluate how one issue or event is represented across various media to understand the notions of bias, audience, and purpose; and

(D) evaluate changes in formality and tone across various media for different audiences and purposes.

(11) The student uses elements of the writing process (planning, drafting, revising, editing, and publishing) to compose text. The student is expected to:

(A) plan a first draft by selecting the correct genre for conveying the intended meaning to multiple audiences; determining appropriate topics through a range of strategies such as discussion, background reading, personal interests, or interviews; and developing a thesis or controlling idea;

(B) structure ideas in persuasive ways such as using outlines, note taking, graphic organizers, or lists to develop drafts in timed and open-ended situations;

(C) revise drafts to clarify meaning, consistency of tone, and logical organization;

(D) edit drafts for grammar, mechanics, and spelling; and

(E) revise a final draft in response to feedback from peers and teacher and publish written work for appropriate audiences.

(12) The student writes expository and procedural or work-related texts to communicate ideas and information to specific audiences for specific purposes. The student is expected to:

(A) write an analytical essay of sufficient length that includes effective introductory, concluding, and supporting paragraphs that incorporate relevant perspectives and evidence;

(B) write procedural and work-related documents such as resumes, proposals, college applications, or operation manuals that include a clearly stated purpose combined with a well-supported viewpoint on the topic; appropriate formatting structures such as headings, graphics, or white space; and accurate technical information; and

(C) produce a multimedia presentation such as a documentary, class newspaper, docudrama, infomercial, or visual or textual parody that includes graphics, images, and sound and appeals to a specific audience.

(13) The student understands the function of and uses the conventions of academic language when speaking and writing. The student continues to apply the knowledge and skills in paragraphs (2)-(12) with greater complexity. The student is expected to:

(A) understand and use adjectival, noun, or adverbial clauses and phrases; and

(B) use a variety of correctly structured sentences such as compound, complex, or compound-complex.

(14) The student writes legibly and uses appropriate capitalization and punctuation conventions in compositions. The student is expected to correctly and consistently use conventions of punctuation and capitalization.

(15) The student spells correctly. The student is expected to spell correctly, including using various resources to determine and check correct spellings.

(16) The student organizes and presents ideas and information according to the purpose of the research and the audience. The student is expected to:

(A) synthesize research into an extended written or oral presentation;

(B) provide an analysis that supports and develops personal opinions, as opposed to simply restating existing information;

(C) use a variety of formats and rhetorical strategies to argue for the thesis;

(D) develop an argument that incorporates the complexities of and discrepancies in information from multiple sources and perspectives while anticipating and refuting counter-arguments;

(E) document sources and format written materials using a style manual such as *Modern Language Association*; and

(F) produce a document of sufficient length and complexity to address the topic.

(17) The student makes oral presentations. The student is expected to use proper conventions of language and presentation.

(18) The student works productively with others in teams. The student is expected to offer ideas or judgments that are purposeful in moving the team toward goals, ask relevant and insightful questions, tolerate a range of positions and ambiguity in decision making, and evaluate the work of the group based on agreed-upon criteria.

§127.245. Foundations of Business Communication and Technologies (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Touch Systems Data Entry. Recommended corequisite: Business Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Foundations of Business Communication and Technologies, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce and postsecondary education. Students apply technical skills to address business applications of emerging technologies, create word-processing documents, develop a spreadsheet, formulate a database, and make an electronic presentation using appropriate software.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student coordinates information management and business management to aid in business planning. The student is expected to:

(A) explain the strategic role of information systems and information communication technology within an organization;

(B) determine risks and rewards of developing a strategic role for information systems and information communication technology; and

(C) integrate information systems planning with business planning.

(2) The student enhances usability of systems operations to support business strategies and operations. The student is expected to:

(A) identify the management information requirements and business needs of an organization; and

(B) explain issues involved in designing and developing systems for different environments.

(3) The student analyzes available software packages for use in business settings. The student is expected to:

(A) determine equipment and supplies needed;

(B) establish equipment and supplies maintenance systems;

(C) schedule equipment maintenance;

(D) use equipment and supplies maintenance procedures; and

(E) use critical-thinking skills to troubleshoot equipment and software issues.

(4) The student uses the computer's operating system to execute work responsibilities. The student is expected to:

(A) move files in the computer operating system;

(B) create directories; and

(C) save files in various formats such as plain text, PDF, rich text format, and older versions of word-processing software.

(5) The student applies word-processing technology. The student is expected to:

(A) identify customary styles of business documents;

(B) improve touch-system skills using the keyboard and keypad to input data;

(C) use hardware and software needed to produce documents to address different computer applications;

(D) demonstrate writing techniques by generating ideas and gathering information relevant to the topic and purpose while maintaining accurate records of outside sources;

(E) produce business documents, including business letters, resumes, research papers, and newsletters;

(F) edit a variety of written documents;

(G) insert and edit objects such as tables, graphics, hyperlinks, headers, and footers into a document;

(H) prepare and distribute personalized correspondence using mail merge; and

(I) use online word-processing technologies to create, edit, and share documents.

(6) The student identifies database software to create databases that facilitate business decision making. The student is expected to:

(A) explain the principles of data analysis;

(B) explain the nature of tools that can be used to access information in the database system;

(C) choose appropriate software;

(D) define fields and type of data;

(E) create database structure;

(F) define relationships of tables;

(G) analyze company data requirements; and

(H) design a database to meet business requirements.

(7) The student applies data entry techniques to enter information in databases. The student is expected to:

(A) access information in the database system;

(B) build data in a data warehouse;

(C) enter and edit data into database tables and database forms for easy data entry; and

(D) import and export databases.

(8) The student uses commands to retrieve data and create reports from databases. The student is expected to:

(A) retrieve data from tables and queries;

(B) formulate queries; and

(C) create and print reports.

(9) The student applies data mining methods to acquire pertinent information for business decision making. The student is expected to:

(A) discuss the nature of data mining;

(B) describe data mining tools;

(C) demonstrate basic data mining techniques; and

(D) interpret data mining findings.

(10) The student applies spreadsheet technology. The student is expected to:

(A) perform mathematical processes, including percentages and decimals, order of operations principle, estimation, and prediction of patterns of data;

(B) formulate and produce solutions to a variety of business problems such as budgets, payroll, inventory, invoices, balance sheets, profit-loss statements, and conversion of foreign currencies;

(C) create charts, graphs, and infographics using spreadsheet data; and

(D) use online spreadsheet technologies to create, edit, and share documents.

(11) The student applies presentation management technology. The student is expected to:

(A) identify the guidelines for using graphics, fonts, and special effects in presentations;

(B) analyze the effectiveness of multimedia presentations;

(C) determine the appropriate technology to create and deliver an effective presentation;

(D) save documents in various formats such as template, video, and PDF to share or transport electronically;

(E) deliver an effective presentation; and

(F) use online presentation management technologies to create, edit, transport, and share documents.

(12) The student applies desktop publishing technology. The student is expected to:

(A) identify technologies available for desktop publishing;

(B) identify customary standards and styles of desktop publishing; and

(C) create desktop publications importing text and graphics.

(13) The student uses a variety of software applications. The student is expected to integrate multiple learned software applications to efficiently accomplish workplace tasks.

§127.246. Business Communication and Technologies (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Foundations of Business Communication and Technologies. Recommended Prerequisite: Touch System Data Entry. Recommended corequisite: Business Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Business Communication and Technologies, students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies, create complex word-processing documents, develop sophisticated spreadsheets using charts and graphs, and make an electronic presentation using appropriate multimedia software.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those that contain the phrase "such as" are intended as possible illustrative samples.

(d) Knowledge and skills.

(1) The student demonstrates project management processes to conduct a business project using emerging technologies. The student is expected to:

(A) initiate a project;

(B) plan a project;

(C) execute a project;

(D) monitor and control a project; and

(E) close a business project.

(2) The student demonstrates the use of the concepts, strategies, and systems for obtaining and conveying ideas and information to enhance communication in a diverse workplace. The student is expected to:

(A) employ verbal and active listening skills when obtaining and conveying information;

(B) record information needed to present a report on a given topic and use items such as tables of contents, indexes, tabs, footnotes, endnotes, captions, and/or building blocks;

(C) write business correspondence using advanced word processing features such as templates and forms; mail merge, including letters, labels, and envelopes; and document protection and security that convey information effectively using correct grammar, spelling, punctuation, and capitalization;

(D) use online word processing technologies to create, edit, and share documents;

(E) communicate with relevant parties such as coworkers and customers by interpreting verbal and nonverbal behaviors;

(F) apply strategies for communicating about issues in dealing with a diverse workforce such as sexual harassment and cultural differences; and

(G) demonstrate the ability to communicate and resolve conflicts within a diverse workforce.

(3) The student creates, evaluates, and uses information resources to accomplish specific occupational tasks. The student is expected to:

(A) create and interpret items such as tables, charts, infographics, and figures to accomplish specific occupational tasks;

(B) use resources such as informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks;

(C) evaluate the reliability of information from sources such as informational texts, Internet websites, and technical materials and resources; and

(D) reference sources of information.

(4) The student develops and delivers formal and informal presentations using appropriate media to engage and inform audiences. The student is expected to:

(A) prepare oral presentations to provide information for specific purposes and audiences;

(B) identify support materials that will enhance an oral presentation;

(C) prepare support materials that will enhance an oral presentation;

(D) deliver an oral presentation that sustains listeners' attention;

(E) align presentation strategies to the intended audience;

(F) implement multimedia strategies for presentations; and

(G) use online presentation management technologies to create, edit, transport, and share documents.

(5) The student demonstrates public relations skills to increase internal and external customer satisfaction. The student is expected to communicate effectively when developing positive customer relationships.

(6) The student designs solutions to mathematical business problems using advanced spreadsheet technologies. The student is expected to:

(A) recognize and apply spreadsheet items such as lookup tables, what-if and built-in functions, macros, and advanced charts, graphs, and functions; and

(B) create and interpret financial statements such as comparisons and projections, predictions and forecasts, trend analyses, and charts and graphs.

(7) The student follows procedures of advanced data management. The student is expected to:

(A) design a database to solve business problems; and

(B) use advanced functions of database management such as updating queries, creating formulas, using built-in formulas, and creating custom format reports.

(8) The student documents technical knowledge and skills. The student is expected to:

(A) prepare a professional electronic portfolio that includes information such as:

(i) attainment of technical skill competencies;

(ii) licensures or certifications;

(iii) recognitions, awards, and scholarships;

(iv) extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;

(v) sample letter of application;

(vi) abstract of key points of accomplishments;

(vii) resume;

(viii) samples of work; and

(ix) evaluation from a teacher; and

(B) present the portfolio to interested stakeholders.

§127.247. Business Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Business Management is designed to familiarize students with the concepts related to business management as well as the functions of management, including planning, organizing, staffing, leading, and controlling. Students will also demonstrate interpersonal and project-management skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates an understanding of the management concept. The student is expected to:

(A) define the term management;

(B) explain management functions, including planning, organizing, staffing, leading, and controlling;

(C) define the management pyramid;

(D) define the role of management;

(E) explain the history and evolution of management;

(F) identify the external and internal environmental factors that influence management;

(G) define ethical workplace behavior;

(H) summarize how to make ethical decisions;

(I) define social responsibility;

(J) explain how socially responsible management policies are initiated and implemented; and

(K) research contemporary cases dealing with ethics and social responsibility using appropriate online technology.

(2) The student recognizes the importance of planning in an organization. The student is expected to:

(A) define the term planning;

(B) explain the necessity of proper planning;

(C) define types of planning such as marketing, financial, and organizational;

(D) identify steps of the management decision-making process, including:

(i) identifying the problem or opportunity;

(ii) gathering relevant information or data;

(iii) determining alternative courses of action;

(iv) evaluating each alternative;

(v) computing an optimal decision;

(vi) implementing the chosen course of action; and

(vii) evaluating the decision feedback and determining if any changes are necessary;

(E) determine competitive advantage;

(F) establish organizational strategy;

(G) determine innovative strategies;

(H) identify the need for change;

(I) define global management; and

(J) explain how the organization will function in a global environment.

(3) The student recognizes the importance of organizations. The student is expected to:

(A) explain how to design an adaptive organization;

(B) define the concepts, methods, and types of departmentalization;

(C) define the chain of command;

(D) explain line authority;

(E) define staff authority;

(F) explain the advantages and disadvantages of different types of organizations, including line, line and staff, and matrix;

(G) define delegation in a management context;

(H) compare and contrast centralized and decentralized organizations;

(I) identify the concept of teams and teamwork; and

(J) define span of control or span of management.

(4) The student explains the role of staffing within an organization. The student is expected to:

(A) describe ethics in human resource issues;

(B) explain or define the major federal employment laws;

(C) define adverse impact and employment discrimination;

(D) identify sexual harassment in the workplace;

(E) explain the methods of recruiting potential employees;

(F) define the selection process for new employees;

(G) explain the types of training needed for newly hired employees;

(H) define professional development in terms of current employees;

(I) explain employee compensation in a competitive environment;

(J) define the potential need for downsizing;

(K) rationalize the costs of employee turnover and what can be done to reduce turnover rate;

(L) explain the need and benefits of a diverse workforce; and

(M) research contemporary cases addressing recruitment, downsizing, and diversity using appropriate online resources.

(5) The student demonstrates the qualities of leadership. The student is expected to:

(A) define motivation;

(B) distinguish between extrinsic and intrinsic rewards;

(C) explain how to address real or perceived inequities in the workplace;

(D) define the Expectancy Theory;

(E) explain how rewards and goals affect motivation;

(F) compare a leader to a manager;

(G) explain the roles of a leader;

(H) explain the traits of an effective leader;

(I) define the different styles of leadership, including autocratic, democratic, and free rein;

(J) explain when each style of leadership is appropriate;

(K) define the management communication process;

(L) explain the concept of employee perception;

(M) analyze the communication process;

(N) compare and contrast formal and informal communication; and

(O) explain how to improve communication within an organization.

(6) The student understands the necessity of the control process. The student is expected to:

(A) examine the control process;

(B) illustrate the five primary control methods;

(C) explain the importance of quality control;

(D) define the strategic importance of management information;

(E) develop the importance of gathering and sharing information;

(F) explain the importance of managing for productivity and growth;

(G) define the quality-related characteristics for products;

(H) explain International Standards Organization (ISO) standards, including ISO 9000 and ISO 14000;

(I) define the quality-related characteristics for services;

(J) explain the Baldridge National Quality Award;

(K) explain the Deming Award;

(L) research and critique recent winners of the Baldridge awards using appropriate online technology;

(M) research and critique recent winners of the Deming award using appropriate online technology;

(N) define Total Quality Management;

(O) explain service operations;

(P) develop a service quality standards instrument such as a customer satisfaction survey or SERVQUAL survey;

(Q) analyze manufacturing operations;

(R) define inventory in the management context; and

(S) explain the fiscal importance of controlling inventory.

(7) The student knows self-development techniques and interpersonal skills to accomplish management objectives. The student is expected to:

(A) recognize personal biases and stereotypes;

(B) identify and practice effective interpersonal skills involving situations with coworkers, supervisors, and subordinates;

(C) identify and practice effective team-building skills involving situations with coworkers, supervisors, and subordinates;

(D) participate in leadership activities;

(E) participate in career development activities;

(F) assess personal strengths and weaknesses; and

(G) develop personal traits and behaviors to foster career advancement.

(8) The student demonstrates project-management skills to improve workflow and minimize costs. The student is expected to:

(A) initiate a project, which includes identifying resources needed for a project;

(B) develop a project plan;

(C) execute a project;

(D) monitor and control a project; and

(E) close a project.

§127.248. Global Business (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Global Business is designed for students to analyze global trade theories, international monetary systems, trade policies, politics, and laws relating to global business as well as cultural issues, logistics, and international human resource management.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes the theories of global trade and investments. The student is expected to:

(A) define global business;

(B) explain the advantages of specialization;

(C) identify the concept of comparative advantage; and

(D) distinguish between portfolio investment and direct investment.

(2) The student analyzes the role of the international monetary system in the economy. The student is expected to:

(A) describe the role of the International Monetary Fund;

(B) argue for and against floating exchange rates;

(C) argue for and against fixed exchange rates;

(D) explain the impact of the common European currency;

(E) calculate foreign exchange rates; and

(F) research cases dealing with global exchange using appropriate online technology.

(3) The student identifies the importance of international financial markets. The student is expected to:

(A) explain how a foreign exchange market functions;

(B) identify the economic factors that influence exchange rates and explain how these factors work; and

(C) differentiate between alternative strategies of global banking.

(4) The student examines various levels of economic integration among foreign countries. The student is expected to:

(A) identify the different levels of economic integration;

(B) explain the various arguments surrounding economic integration; and

(C) describe the organization of the European community.

(5) The student identifies the importance of different trade and trade investment policies. The student is expected to:

(A) understand the role of foreign aid in global trade and investment;

(B) explain the goals of the General Agreement on Tariffs and Trade and the North American Free Trade Agreement;

(C) identify the major ways in which imports are being restricted and describe reasons for controlling exports; and

(D) research cases and issues on global trade using appropriate online technology.

(6) The student analyzes the implications of politics and laws that control and regulate global business. The student is expected to:

(A) describe the reasoning behind the regulation of global business behavior;

(B) analyze the Foreign Corrupt Practices Act; and

(C) discuss the role of international law in the conduct of global business.

(7) The student researches the business elements of cultural challenges and diversity. The student is expected to:

(A) explain the role of culture in global business;

(B) identify various elements of culture; and

(C) suggest ways for managers to understand and deal with cultural diversity.

(8) The student demonstrates the process in implementing a global operation. The student is expected to:

(A) describe the rise of global linkages in global business;

(B) describe the position of the United States in global trade;

(C) list advantages and problem areas for U.S. firms wanting to enter global business;

(D) research current cases on imports, exports, and balance of trade using appropriate online technology;

(E) relate effects of copyrights and trademarks and intellectual property rights on global business;

(F) identify advertising media used in foreign markets such as newspaper, radio, television, Internet, and magazine;

(G) define fair trade; and

(H) describe benefits of fair trade domestically and internationally.

(9) The student analyzes the cost effect when using global logistics for a mode of transportation. The student is expected to:

(A) define global logistics;

(B) distinguish between materials management and physical distribution;

(C) list the factors that influence the selection of particular transportation modes;

(D) describe the usefulness of free trade zones;

(E) research free trade zones locally and statewide using appropriate online technology; and

(F) relate the effects of geography, time zones, work days, resources, and natural harbors on global business.

(10) The student identifies different strategies for exporting in the global market. The student is expected to:

(A) discuss the procedure by which a foreign target market is selected;

(B) determine the pricing strategy for export items;

(C) identify various data-based analytical techniques available for estimating market potential; and

(D) evaluate the reasons behind the need to standardize or to adapt the marketing mix.

(11) The student identifies the functional changes in process with global human resource management. The student is expected to:

(A) explain the objectives of human resource management in a global firm;

(B) describe how the human resources function changes as a firm goes global;

(C) identify sources of recruitment for staffing positions abroad; and

(D) describe differences and similarities of training employees in different countries.

(12) The student analyzes employability skills to obtain successful employment with a company. The student is expected to:

(A) assess personal global marketability;

(B) identify appropriate employment opportunities abroad;

(C) evaluate global employment options such as salaries, benefits, and prerequisites; and

(D) generate an orientation manual for people preparing to live and work in a foreign country.

(13) The student knows how to use self-development techniques and interpersonal skills to accomplish human resources objectives. The student is expected to:

(A) identify and practice effective interpersonal and team-building skills involving situations with coworkers, supervisors, and subordinates; and

(B) participate in leadership and career development activities.

§127.249. Virtual Business (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Touch System Data Entry. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Virtual Business is designed for students to start a virtual business by creating a web presence, conducting online and off-line marketing, examining contracts appropriate for an online business, and demonstrating project-management skills. Students will also demonstrate bookkeeping skills for a virtual business, maintain business records, and understand legal issues associated with a virtual business.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes an overview of starting and growing a virtual business office. The student is expected to:

(A) identify the nature, history, and duties of a virtual business office;

(B) list benefits afforded to virtual business clients;

(C) assess personality characteristics to determine suitability for being a self-employed virtual business office employee;

(D) inventory skills, interests, strengths, and weaknesses to determine appropriate services to offer;

(E) prepare a business plan, including the following sections: executive summary, mission statement, long- and short-term goals, marketing plan, financial plan, and organizational plan; and

(F) examine global business considerations.

(2) The student demonstrates online and off-line marketing, including establishing a web presence. The student is expected to:

(A) create and design a website for a virtual business office;

(B) describe details of setting up a virtual business office;

(C) determine appropriate marketing of a virtual business office;

(D) describe steps to successfully market a virtual business office; and

(E) participate in leadership and career development activities.

(3) The student develops contracts appropriate for virtual business office services provided. The student is expected to:

(A) research details of setting up a virtual business office;

(B) determine particulars of communicating with clients locally and remotely; and

(C) set appropriate fees for virtual business office services provided.

(4) The student establishes pricing, billing, and collections procedures. The student is expected to:

(A) research pricing and billing practices of a virtual business office;

(B) research appropriate recordkeeping and tax issues;

(C) apply fundamental bookkeeping skills for a virtual business office;

(D) define appropriate bookkeeping terminology such as accounts payable, accounts receivable, income, expense, asset, liability, profit, balance sheet, and income statement; and

(E) prepare appropriate bookkeeping statements, including basic balance sheet and income statement.

(5) The student describes legal and tax issues related to running a virtual business office. The student is expected to:

(A) determine local licensing requirements required for a virtual business office;

(B) set up a virtual business office;

(C) research support resources for a virtual business; and

(D) describe the advantages and disadvantages of the various forms of legal construction of a virtual business office.

(6) The student maintains business records to facilitate management. The student is expected to:

(A) describe the nature of business records needs for a virtual business office; and

(B) maintain customer records.

(7) The student acquires information to analyze business decision making. The student is expected to:

(A) monitor internal records for business information; and

(B) conduct an environment scan to obtain business information and interpret statistical findings.

(8) The student demonstrates project-management skills to improve workflow and minimize costs. The student is expected to:

(A) initiate a project, which includes identifying resources needed for a project;

(B) develop a project plan;

(C) execute a project;

(D) monitor and control a project, including coordinating work with that of team members; and

(E) close a project.

§127.250. Human Resources Management (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Human Resources Management is designed to familiarize students with the concepts related to human resource management, including legal requirements, recruitment and employee selection methods, and employee development and evaluation. Students will also become familiar with compensation and benefits programs as well as workplace safety, employee-management relations, and global impacts on human resources.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates an understanding of the traditional human resources functions. The student is expected to:

(A) define the term human resources;

(B) classify the basic human resources functions such as recruiting, selecting, training, developing, and compensating;

(C) explain contemporary issues facing human resources managers such as globalization, diversity, new technologies, knowledge workers, and changing trends in the workplace;

(D) explain strategies used by contemporary human resources management such as proactive, reactive, downsizing, outsourcing, offshoring, and employee leasing to deal with change;

(E) illustrate how the changing demographic trends in the workplace impact diversity in human resources management;

(F) categorize the basic responsibilities of a human resources manager, including advice and counsel, service, policy formulation and implementation, and employee advocacy;

(G) explain the basic competencies required of an effective human resources manager, including business mastery, human resources mastery, and personal credibility; and

(H) define the need and proper steps for strategic planning in human resources such as mission, vision, and values; environmental analysis; internal analysis; strategy formulation; strategy implementation; and evaluation and assessment.

(2) The student understands and explains how to meet human resources requirements. The student is expected to:

(A) analyze the major Equal Employment Opportunity laws;

(B) discuss federal laws and executive orders that influence human resources management;

(C) explain the importance of establishing and implementing strong policies and procedures for dealing with sexual harassment;

(D) examine the contemporary social and political issues facing human resources such as sexual orientation, immigration reform and control, and Uniform Guidelines on Employee Selection Procedures;

(E) explain the proper procedures to comply with Equal Employment Opportunity Commission rules and regulations;

(F) analyze the contemporary concepts of job analysis, employee involvement, and flexible work schedules;

(G) create a job description; and

(H) research current cases dealing with equal employment using appropriate online technology.

(3) The student demonstrates the proper methods and sources of recruitment. The student is expected to:

(A) evaluate the proper methods of recruiting externally;

(B) explain the proper methods of recruiting internally;

(C) hypothesize how to develop a diverse pool of talent for employment consideration; and

(D) explain the application of Equal Employment Opportunity Commission guidelines to the recruitment process.

(4) The student demonstrates the proper methods of employee selection. The student is expected to:

(A) explain how to match an applicant to a job using job analysis and a job description;

(B) explain the different types of commonly used preemployment tests such as polygraph tests, honesty and integrity testing, graphology, physical examination, and drug testing;

(C) clarify the relevant factors that should be considered in conducting a criminal background check; and

(D) demonstrate the proper methods of conducting pre-employment interviews.

(5) The student describes the need for training. The student is expected to:

(A) analyze the information necessary prior to the implementation of any job-related training, including task analysis and person analysis;

(B) design a training program;

(C) explain how to implement a training program;

(D) evaluate a training program;

(E) illustrate the necessity for new employee orientation and the topics that should be covered;

(F) explain the concept of on-the-job training and other forms of skills training; and

(G) understand the need for training newly hired employees in proper Equal Employment Opportunity Commission rules and procedures, including training on sexual harassment.

(6) The student describes the need to develop and evaluate employees. The student is expected to:

(A) explain why employees often need additional training such as learning new skills and technologies and complying with new laws and regulations;

(B) construct an employee appraisal program that complies with all applicable laws; and

(C) explain who should evaluate employees, including supervisors and managers, peers, customers or clients, and subordinates.

(7) The student describes how to implement a compensation program. The student is expected to:

(A) interpret the basis of compensation and how it meets with organizational objectives;

(B) explain the factors that influence the pay and benefits system;

(C) summarize pay for performance, commission, and piece-rate systems;

(D) explain how to perform a wage and salary survey;

(E) interpret competence-based pay;

(F) understand the major federal regulations that influence employee compensation, including Davis-Bacon Act, Walsh-Healy Act, and Fair Labor Standards Act;

(G) identify some of the contemporary issues regarding compensation, including equal pay, wage-rate compression, comparable worth, low salary budgets, and employee stock ownership plans;

(H) explain pay for performance incentives such as bonuses, merit pay, profit sharing, recognition, and stock options;

(I) explain the ethical and public relations issues regarding executive compensation; and

(J) research contemporary cases dealing with executive compensation using appropriate online technology.

(8) The student masters the intricacies of creating and implementing a benefits plan. The student is expected to:

(A) explain the federally mandated benefits, including Federal Insurance Contributions Act Tax, Federal Unemployment Tax Act, workers' compensation, Consolidated Omnibus Budget Reconciliation Act, Family and Medical Leave Act, and Older Workers Benefit Protection Act;

(B) summarize the major discretionary benefits such as healthcare, payment for time not worked, holidays, vacation, sick leave, personal days off, supplemental unemployment benefits, life insurance, long-term care insurance, retirement, pension plans, and thrift plans; and

(C) explain the ancillary services sometimes offered to employees such as employee assistance plans, personal counseling, child and elder care, credit unions, cafeterias, employee discounts, legal services, and recreation and health clubs.

(9) The student discusses the importance of workplace safety and health rules and regulations. The student is expected to:

(A) interpret the Occupational Safety and Health Act;

(B) explain the right-to-know laws;

(C) construct a program promoting safety awareness;

(D) explain the necessity of enforcing workplace safety rules;

(E) explain the processes for recording and investigating workplace accidents;

(F) demonstrate what can be done to prevent or address workplace violence;

(G) explain what can be done to address employee stresses in the workplace; and

(H) research contemporary cases addressing workplace violence using appropriate online technology.

(10) The student discusses employee-management relations. The student is expected to:

(A) explain employee rights versus employer responsibilities;

(B) describe how to implement disciplinary policies and procedures;

(C) identify the proper methods of discharging employees;

(D) define the concept of Alternative Dispute Resolution;

(E) summarize the major federal labor relations laws, including Railway Labor Act, Norris-LaGuardia Act, Wagner Act, and Landrum-Griffin Act;

(F) describe the reasons why employees unionize;

(G) explain what employers can and cannot do during the unionization process;

(H) explain the structure and functions of a union;

(I) discuss the major union organizations such as AFL-CIO, national unions, local unions, and international unions;

(J) summarize the collective bargaining process and the issues typically negotiated such as wages, hours, and working conditions;

(K) explain a typical grievance procedure;

(L) define grievance arbitration;

(M) explain the contemporary challenges facing labor organizations and unions, including foreign competition, technological change, decline in union membership, and employers' focus on maintaining good working conditions to maintain non-union status; and

(N) research contemporary cases on labor relations using appropriate online technology.

(11) The student analyzes the future global considerations impacting human resources. The student is expected to:

(A) explain international human resource issues;

(B) identify the issues associated with recruiting and selecting employees internationally;

(C) discuss how to deal with compensation issues in a host country environment;

(D) identify the problems and solutions for addressing international employee evaluations and appraisals; and

(E) explain the international organized labor environment.

(12) The student knows self-development techniques and interpersonal skills to accomplish human resources objectives. The student is expected to:

(A) identify and practice effective interpersonal and team-building skills involving situations with coworkers, supervisors, and subordinates; and

(B) participate in leadership and career development activities.

§127.251. Financial Mathematics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Financial Mathematics is a course about personal money management. Students will apply critical-thinking skills to analyze personal financial decisions based on current and projected economic factors.

(4) Financial Mathematics will integrate career and postsecondary education planning into financial decision making.

(5) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student applies mathematical process standards to demonstrate an understanding of employment earnings. The student is expected to:

(A) identify sources of income, including wages and salaries, interest, rent, dividends, and capital gains;

(B) compare common employee benefits such as health insurance, sick leave, and retirement plans;

(C) differentiate among and calculate gross, net, and taxable income;

(D) analyze and interpret payroll deductions, including federal taxes, state taxes, and city taxes, using current tax rates;

(E) examine and evaluate the reasons for federal income taxation, Social Security taxation, and Medicare taxation, including earnings limitations as applicable;

(F) calculate net pay;

(G) compare and contrast between independent contractor earnings and employee earnings, including tax requirements, tax forms (W-2, W-4, 1099, and Form 941), and benefit requirements;

(H) calculate the various earnings as affected by the laws related to minimum wage, overtime, income from tips, exempt and non-exempt status, and contract and employee status;

(I) calculate the impact of paying with after-tax dollars versus pre-tax dollars for items such as medicine, services, and investments;

(J) analyze and interpret total compensation, including payroll, Federal Insurance Contribution Act (FICA) tax, employer cost of benefits, employers' matching costs for FICA and Medicare, and employer match in savings plans, to explain how compensation is more than what is reflected in a paycheck;

(K) compare total compensation as a self-employed or independent contractor with total compensation as an employee; and

(L) analyze how economic and other conditions can affect income and career opportunities and the need for lifelong training and education.

(3) The student applies mathematical process standards to demonstrate an understanding of the various federal taxes. The student is expected to:

(A) calculate federal income taxes owed or refunded, including the completion of a 1040EZ and 1040, using current rates;

(B) calculate capital gains tax using current rates;

(C) calculate self-employment or independent contractor taxes using current rates;

(D) define and locate sources for current rates for estate and inheritance taxes;

(E) analyze gift and estate taxes using current rates;

(F) calculate tax on interest income and use regression methods available through technology to analyze data and interpret the results by tax bracket;

(G) calculate personal exemptions;

(H) calculate itemized deductions and compare to standard deductions;

(I) calculate deductible charitable contributions;

(J) understand filing status as it applies to X, Y, and Z tax schedules;

(K) compare marginal tax rates to effective income tax rates and the misuse of these terms in advertising;

(L) describe the relationships among education tax credit, student loan interest, dependency and filing status, and income tax liability; and

(M) research and locate options for tax return preparation such as software programs and tax preparation providers.

(4) The student applies mathematical process standards to demonstrate an understanding of the various financial institutions and accounts. The student is expected to:

(A) demonstrate an understanding of various forms of financial exchange, including cash, checks, credit cards, debit cards, and electronic funds transfers;

(B) identify and explain the advantages and disadvantages of interest-bearing accounts such as savings accounts, checking accounts, certificates of deposits, and money market accounts;

(C) calculate the time value of money, with or without technology, using exponential and rational functions that include graphs, tables, and algebraic methods related to simple and compound interest;

(D) analyze various representations of exponential functions with respect to compound interest situations and use the rule of 72 to determine the number of years it will take for savings to double in value;

(E) analyze a bank statement for accuracy;

(F) compare financial services offered in the community; and

(G) identify the sources of funds such as savings, earnings, or debt to be used to purchase consumable and nonconsumable goods.

(5) The student applies mathematical process standards to demonstrate an understanding of the various types of credit. The student is expected to:

(A) determine the advantages and disadvantages of credit cards such as cashback rewards, balance transfer, foreign currency, interest rates charged, late payment fees, credit score, and bonus incentives;

(B) calculate the cost of using credit cards, including various financial fees;

(C) analyze and compare graphically, with or without technology, the differences in the cost of borrowing such as using a bank loan, a credit union loan, a student loan, and an easy-access loan such as a pay-day loan and an auto title loan;

(D) analyze the risks for each type of loan;

(E) evaluate the process for a bank loan or a credit union loan;

(F) collect and organize data, make and interpret scatterplots, interpret the results, and make critical judgments about loan balances when equal monthly payments are made;

(G) analyze credit scores and explain the meanings of the scores;

(H) explain ways a negative credit report can affect a consumer's financial options; and

(I) analyze a personal credit report.

(6) The student applies mathematical process standards to demonstrate an understanding of the cost of housing by comparing home purchases and renting. The student is expected to:

(A) analyze data of mortgage payments with various additional principal payments involving exponential functions using tables, graphs, or algebraic methods;

(B) create an amortization table using technology to collect and organize data to make decisions and critical judgments about varying the down payment, period of loan, special principal payment, and interest rate for a home loan;

(C) compare options for saving for a down payment on a home;

(D) determine costs associated with home ownership, including property taxes; mortgage insurance; homeowner's insurance, including property damage, liability, and flood and earthquake insurances; and closing costs;

(E) analyze and interpret mortgage tax deductions;

(F) determine other costs associated with home ownership, including cost of maintenance, repairs, utilities, and association fees;

(G) determine the appropriate savings needed to maintain home payments in the event of a financial emergency;

(H) demonstrate an understanding of the consequences to individuals in times of recession and falling home prices such as during the mortgage crisis of 2007-2008 and identify how the financial and personal impact could have been reduced;

(I) compare the cost of homeownership versus renting, identifying benefits and drawbacks to both homeownership and renting such as the mortgage-related income tax deductions;

(J) use the multiple listing service to identify and compare housing properties;

(K) analyze and explain a typical apartment lease such as terms, deposit, occupancy, parking, and cancellation contract policy; and

(L) compare options for coverage for renter's insurance.

(7) The student applies mathematical process standards to demonstrate an understanding of the difference between a vehicle purchase and a vehicle lease and costs associated with each. The student is expected to:

(A) create an amortization table using technology to collect and organize data to make decisions and critical judgments about varying the down payment, period of loan, special principal payment, and interest rates for a vehicle loan;

(B) determine the costs associated with owning and leasing a vehicle, including insurance, maintenance, repairs, and fuel;

(C) compare the total cost of buying and owning a vehicle to leasing a vehicle;

(D) compare the total cost of purchase and maintenance of several possible vehicles;

(E) identify and understand the costs and benefits of maintenance contracts and vehicle warranties;

(F) calculate the funding needed to maintain vehicle payments in the event of a financial emergency; and

(G) research various options for a driver's education course and the benefits of the course and the impact of a moving violation on insurance rates.

(8) The student applies mathematical process standards to demonstrate an understanding of investment options. The student is expected to:

(A) identify the factors involved in the various methods of buying and selling stocks and mutual funds, including load and no-load funds, by evaluating the stock dividend yield, price-earnings ratio, return on investment, earnings per share, and net asset value;

(B) calculate the cost of buying and selling bonds and analyze the investment return from bond yield and bond interest payment;

(C) compare differences among investments, including stocks, bonds, mutual funds, Exchange Traded Funds, and real estate; and

(D) compare the risk and return for a diversified and non-diversified investment portfolio in a student-created portfolio.

(9) The student applies mathematical process standards to demonstrate an understanding of various types of insurance, including life, health, disability, and income insurances, and special protection. The student is expected to:

(A) analyze the costs and benefits of term and permanent (whole) life insurance such as the cost of premiums, dividends, accumulation of cash value, tax treatment of death benefits, and protection from creditors of death benefits and cash values;

(B) estimate the amount of life insurance needed using a needs approach or an earnings multiple approach;

(C) estimate the cost of healthcare coverage, including the cost of health insurance premiums, co-payments, deductibles, and out-of-pocket expenses;

(D) explain the need for disability income insurance and research the cost;

(E) compare the benefits to the costs of special protection coverages such as cancer, pet, vacation, burial, international travel, and purchase protection;

(F) demonstrate an understanding of the actuarial process used to set premiums; and

(G) demonstrate an understanding of insurance company and agent selection and professional designations within the insurance profession.

(10) The student applies mathematical process standards to demonstrate an understanding of retirement plans. The student is expected to:

(A) compare tax advantage retirement plans, including Individual Retirement Accounts (IRAs), Roth IRAs, 401(k) plans, and 403(b) plans, and determine an appropriate investment for retirement;

(B) calculate and graph the exponential function showing the benefits of starting early to invest with continuous contributions;

(C) calculate tax treatment penalty for early withdrawal; and

(D) calculate, using technology, the amount that must be saved annually to achieve financial independence by a desired age.

(11) The student applies mathematical process standards to demonstrate an understanding of a fixed pension, a variable pension,

social security, and an annuity. The student is expected to identify an annuity and calculate and display graphically the future value of an annuity.

(12) The student applies mathematical process standards to demonstrate an understanding of wills and trusts for the distribution of assets at death. The student is expected to identify how wills and trusts support the distribution of assets after death.

(13) The student applies mathematical process standards to demonstrate an understanding of charitable giving. The student is expected to demonstrate an understanding of the value and benefits of charitable giving.

(14) The student applies mathematical process standards to demonstrate an understanding of the budgeting process. The student is expected to:

(A) create a comprehensive balanced personal budget, including fixed and variable expenses, college savings, emergency savings, and retirement savings;

(B) identify free resources to assist with maintaining a budget; and

(C) compare different standards of living in the United States, including poverty, minimum wage, living wage, and desired standards of living.

(15) The student applies mathematical process standards to demonstrate an understanding of identity theft. The student is expected to:

(A) define and explain types of identity theft;

(B) create a plan for prevention of identity theft; and

(C) identify suitable methods for reporting identity theft.

(16) The student applies mathematical process standards to demonstrate an understanding for a postsecondary plan. The student is expected to:

(A) understand educational, military, and current job opportunities;

(B) research and align interests and skills with potential careers and postsecondary education to assure a life strategy that will produce employment the student enjoys with a desired standard of living;

(C) calculate the total funding required to complete a desired postsecondary education program;

(D) identify different resources for acquiring funding for education after high school such as personal savings, employment, Free Application for Federal Student Aid (FAFSA), Texas Application for Federal Student Aid, Expected Family Contribution, Pell Grants, work-study programs, student loans, Individual Development Accounts, scholarships such as the Preliminary SAT/National Merit Scholarship Qualifying Test (PSAT/NMSQTÂ®), and internships to reduce the projected cost of education;

(E) identify benefits and potential savings for students investing in themselves such as taking Advanced Placement and dual credit classes;

(F) graph and compare compensation earnings of potential careers and the cost of postsecondary education; and

(G) calculate the Return on Investment from completing a desired postsecondary education program, taking into consideration anticipated earnings for a selected degree and the cost of attending a specific postsecondary program.

§127.252. Money Matters (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Money Matters, students will investigate money management from a personal financial perceptive. Students will apply critical-thinking skills to analyze financial options based on current and projected economic factors. Students will gain knowledge and skills necessary to establish short-term and long-term financial goals. Students will examine various methods of achieving short-term and long-term financial goals through various methods such as investing, tax planning, asset allocating, risk management, retirement planning, and estate planning.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses career planning concepts, tools, and strategies to explore, obtain, and develop a financial plan. The student is expected to:

(A) discuss the nature and benefits of financial planning; and

(B) discuss the role of ethics and personal responsibility in financial planning.

(2) The student demonstrates an understanding of a postsecondary plan. The student is expected to:

(A) understand educational, military, and current job opportunities; and

(B) create a postsecondary plan that includes topics such as application requirements; testing requirements; certification requirements; associated deadlines; associated costs, including living expenses; job prospects and opportunities; beginning earnings; expected future earnings; and resumes and cover letters.

(3) The student demonstrates an understanding of the fundamental principles of money. The student is expected to:

(A) explain forms of financial exchange, including cash, credit cards, debit cards, and electronic funds transfer;

(B) compare and contrast various types of currency, including paper money, coins, banknotes, government bonds, and treasury notes;

(C) identify functions of money, including medium of exchange, unit of measure, and store of value;

(D) describe sources of income, including wages and salaries, interest, rent, dividends, capital gains, and transfer payments;

(E) explain the time value of money; and

(F) discuss the purposes and importance of credit.

(4) The student examines economic systems. The student is expected to:

(A) explain sole proprietorships, partnerships, and corporations;

(B) identify factors affecting profit, revenue, and expenses; and

(C) understand the rights and responsibilities of consumers within various economic systems.

(5) The student examines personal financial activities and the role of government. The student is expected to:

(A) analyze the importance and purpose of taxes;

(B) analyze monetary policy and fiscal policy;

(C) analyze the supply and demand for money; and

(D) analyze the role of the Federal Reserve System.

(6) The student discusses economic indicators impacting personal financial decision making. The student is expected to:

(A) analyze the measure of consumer spending as an economic indicator;

(B) analyze the impact of a nation's unemployment rates;

(C) analyze the concept of Gross Domestic Product;

(D) analyze the economic impact of inflation on personal financial decision making;

(E) analyze unemployment and inflation tradeoffs;

(F) analyze the economic impact of interest rate fluctuations; and

(G) analyze the impact of business cycles on personal financial decision making.

(7) The student analyzes the impact of international activities on personal financial decision making. The student is expected to:

(A) examine international current events as related to personal financial decision making;

(B) examine currency exchange rates; and

(C) examine domestic and international labor issues as related to personal financial decision making.

(8) The student examines how personal financial decisions are used to achieve financial goals. The student is expected to:

(A) develop a budget based on personal financial goals;

(B) explain the benefits of saving and investing;

(C) examine tax liabilities, including as they relate to the completion of a W-4;

(D) analyze a pay stub;

(E) interpret and reconcile bank statements;

(F) maintain financial records;

(G) evaluate credit scores;

(H) use identify theft protection measures; and

(I) prepare personal income tax forms by completing a 1040EZ with a W-2 form and using current tax tables.

(9) The student understands the purposes of financial service providers. The student is expected to:

(A) describe types of financial service providers, including banks and credit unions;

(B) evaluate financial service providers based on selection criteria such as location, interest rates, and benefits;

(C) analyze financing needed for long-term personal assets, including home purchases and payments and auto purchases, leases, and payments;

(D) explain loan evaluation criteria used by lending institutions;

(E) summarize the components of a loan application package;

(F) calculate a home loan payment schedule;

(G) calculate an automobile loan payment schedule; and

(H) understand the risks of using a payday loan and title loan.

(10) The student identifies various investment strategies. The student is expected to:

(A) evaluate different types of investments such as stocks, bonds, and property;

(B) evaluate investment goals and objectives as they relate to risk tolerance;

(C) investigate the opportunities and costs of postsecondary education;

(D) investigate long-term needs and financial goals, including retirement; and

(E) investigate the factors that affect the value of investments.

(11) The student identifies methods to manage personal risk. The student is expected to:

(A) understand the concept of insurance;

(B) explore the reasons for obtaining personal insurance, including health, disability, life, cancer, and long-term care insurance;

(C) explore the reasons for obtaining property insurance coverage, including homeowner's, personal liability, renter's, flood, earthquake, and auto insurance; and

(D) understand the insurance claim settlement process.

§127.253. Securities and Investments (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Securities and Investments, students will understand the laws and regulations to manage business operations and transactions in the securities industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student describes laws and regulations in order to manage personal and business operations and transactions in the securities and investments industry. The student is expected to:

(A) explain regulation of the securities and investments industry, including the role of the Securities and Exchange Commission;

(B) understand the legal and ethical considerations in buying and selling securities; and

(C) understand the state regulation of the securities and investments industry.

(2) The student describes investment analysis and selection processes. The student is expected to:

(A) describe types of investment objectives;

(B) consider the nature of investment risk;

(C) analyze diversification strategies;

(D) understand factors to consider when selecting investments;

(E) analyze information that can be obtained from financial statements and annual reports;

(F) examine a mutual fund prospectus;

(G) interpret analysis used in making investment decisions;

(H) discuss strategies for selecting investments;

(I) identify performance measurements for venture capital; and

(J) describe investment analysis and selection theory such as the Modern Portfolio Theory, the Capital Asset Pricing Model, and the Arbitrage Pricing Theory.

(3) The student identifies investments. The student is expected to:

(A) interpret financial ratios significant to investors, including price earnings ratio;

(B) calculate stock-related values such as the value of a constant growth stock, the expected value of future dividends, and the expected rate of return;

(C) calculate bond-related values such as the price of a bond given its yield to maturity, the coupon interest payment for a bond, and the effects of interest rates on the price of a bond;

(D) calculate bond present value and future value; and

(E) select investments based on financial analysis such as financial ratios.

(4) The student understands security and investment operations. The student is expected to:

(A) examine security and investment operational activities;

(B) discuss the operations of a securities and investment office;

(C) examine the buy and sell functions of a brokerage firm; and

(D) discuss and calculate commissions.

(5) The student explores security and investment licensing and certification programs. The student is expected to:

(A) explore educational requirements;

(B) compare and contrast the Series 6 and Series 7 licensing exams required to sell securities and other financial products; and

(C) explain professional designations in the securities and investments industry such as Certified Fund Specialist, Charted Financial Analyst, Board Certified in Asset Allocation, Board Certified in Securities, Certified Senior Consultant, and Certified Financial Planner.

(6) The student understands investments and their relationships to the economy. The student is expected to:

(A) evaluate the environments in which security and investment services are offered, including securities sales agents, securities and investments firms, and securities markets;

(B) evaluate causes of stock price fluctuations;

(C) evaluate the relationship between bond prices and yields;

(D) evaluate the role of investment banking in the primary marketplace; and

(E) evaluate margin accounts, short sales, market timing, and international strategies.

(7) The student demonstrates an understanding of securities and investments products. The student is expected to evaluate securities and investments products such as stocks, dividends, stock splits, options strategies, hedge funds, futures, bonds, mutual funds, venture capital, real estate, retirement investment plans, and education savings and the advantages and disadvantages from an issuer and investor perspective.

(8) The student demonstrates an understanding of a postsecondary plan. The student is expected to:

(A) understand educational, military, and current job opportunities; and

(B) create a postsecondary plan that includes topics such as application requirements; testing requirements; certification requirements; associated deadlines; associated costs, including living expenses; job prospects and opportunities; beginning earnings; expected future earnings; and resumes and cover letters.

§127.254. Insurance Operations (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Insurance Operations, students will understand the laws and regulations in order to manage business operations and transactions in the insurance industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student has an understanding of the insurance industry. The student is expected to:

(A) examine the insurance industry;

(B) evaluate components of automobile insurance coverage;

(C) evaluate components of homeowner's insurance and renter's insurance, including a personal umbrella liability policy;

(D) evaluate the purpose of flood insurance and earthquake insurance;

(E) evaluate the purpose of commercial property insurance;

(F) evaluate the purpose of commercial liability insurance;

(G) evaluate the purpose of title insurance;

(H) evaluate the purpose of health insurance, long-term care insurance, and cancer insurance;

(I) compare and contrast Medicare and Medicaid;

(J) investigate the purpose of unemployment insurance;

(K) evaluate the purpose of workers' compensation insurance;

(L) evaluate the purpose of disability insurance;

(M) compare and contrast the purpose of life insurance, including term, whole, and group;

(N) summarize the role of life insurance in investment and estate planning;

(O) compare and contrast the methods that insurance companies use to generate income, including collection of premiums and investing activities;

(P) evaluate the use of state risk pool programs; and

(Q) summarize trends in the insurance industry such as hacker insurance, pet insurance, travel insurance, and identity theft insurance.

(2) The student explores careers in insurance. The student is expected to:

(A) explore education, licensing, and certification requirements; and

(B) understand the role and responsibilities of insurance professionals such as agents, underwriters, actuaries, claims personnel, and investigators.

(3) The student examines regulations that ensure compliance adherence to insurance industry regulations. The student is expected to:

(A) evaluate the ethical and social responsibilities in the field of insurance;

(B) summarize federal and state regulations governing the insurance industry;

(C) assess the significance of the Consolidated Omnibus Budget Reconciliation Act (COBRA);

(D) assess the Health Insurance Portability and Accountability Act (HIPAA), including Title I and Title II; and

(E) assess the Patient Protection and Affordable Care Act (PPACA).

(4) The student explains legal concepts pertinent to the insurance industry. The student is expected to:

(A) examine legal principles that pertain to insurance such as indemnity, insurable interest, subrogation, and utmost good faith; and

(B) evaluate insurance contracts.

(5) The student identifies the components used in the insurance industry for approval and denial decisions. The student is expected to:

(A) explain the importance of actuarial science in the insurance industry;

(B) examine the nature of credit-based insurance scores; and

(C) examine the underwriting process.

(6) The student has an understanding of insurance fraud. The student is expected to:

(A) examine various types of insurance fraud;

(B) investigate various methods for detecting insurance fraud; and

(C) investigate and research a current event about insurance fraud to create a grammatically correct, written report with citations for presentation.

(7) The student demonstrates an understanding of the claims process. The student is expected to examine the claims process, including the role of the agent and the adjustor.

(8) The student identifies different insurance providers and rates. The student is expected to:

(A) compare and contrast insurance company ratings; and

(B) compare and contrast insurance premiums according to gender, geographic area, and age.

(9) The student demonstrates an understanding of identity theft. The student is expected to create a plan for prevention of identity theft and for the reporting of identify theft.

(10) The student demonstrates an understanding of a postsecondary plan. The student is expected to:

(A) understand educational, military, and current job opportunities; and

(B) create a postsecondary plan that includes topics such as application requirements; testing requirements; certification requirements; associated deadlines; associated costs, including living expenses; job prospects and opportunities; beginning earnings; expected future earnings; and resumes and cover letters.

§127.255. Banking and Financial Services (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Banking services are primarily concerned with accepting deposits, lending funds, and extending credit. Banking services include cash management, short-term investments, mortgages and other loans, credit cards, and bill payment. Banking services are delivered via a number of different institutions, from commercial banks (the largest group) and other traditional means (savings and loans associations, credit unions, and local banks) to newer ventures through insurance companies, brokerage houses, and the Internet.

(4) In Banking and Financial Services, students will develop knowledge and skills in the economic, financial, technological, international, social, and ethical aspects of banking to become competent employees and entrepreneurs. Students will incorporate a broad base of knowledge that includes the operations, sales, and management of banking institutions to gain a complete understanding of how banks function within society.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student evaluates the role of banking in the modern economy. The student is expected to:

(A) outline the evolution of money and banking in the U.S. economy;

(B) explain the operation of the Federal Reserve Bank and its role in the economy;

(C) outline and analyze the history and the impact of the use of the gold or silver standard in monetary policy;

(D) compare and contrast the types of financial institutions such as commercial banks, savings and loan associations, credit unions, investment banks, financial services companies, and mortgage companies;

(E) discuss the role of the World Bank Group in international financial assistance; and

(F) explain the nature of government agencies that provide financing to businesses such as the Export-Import Bank of the United States and the Small Business Administration.

(2) The student acquires knowledge of banking processes and services. The student is expected to:

(A) describe the nature of banking processes;

(B) describe the types of banking services;

(C) discuss retail bank products and services;

(D) explain business bank products and services;

(E) describe basic teller performance standards;

(F) discuss the nature of loan products; and

(G) discuss trust services available to customers.

(3) The student describes the roles and responsibilities in banking services, including educational requirements. The student is expected to:

(A) explain the role and responsibilities of administrative careers in banking services; and

(B) describe the role and responsibilities of executive and managerial careers in banking services.

(4) The student determines client needs and wants and responds through planned, personalized communication to influence purchase decisions and enhance future business opportunities in banking services. The student is expected to:

(A) describe the importance of selling in the banking industry, including cross-selling and relationship selling;

(B) explain the process of opening a new account; and

(C) describe loan terms for a client.

(5) The student simulates the day-to-day activities within a banking organization in order to ensure secure operations. The student is expected to:

(A) describe bank loss prevention measures such as procedures for the secure handling of cash and checks; detecting and reporting counterfeit currency; developing business continuity plans; and preventing crimes to which a bank could fall victim such as fraud, robbery, and phishing;

(B) discuss the role of the Federal Reserve System in banking operations and cash-handling procedures;

(C) simulate daily cash processing activities such as processing damaged and mutilated currency and coin, ordering and depositing currency, depositing checks, handling differences in cash received and deposited, and transporting cash;

(D) analyze the underwriting of loan applications to determine credit worthiness of customers, including credit analysis, and factors affecting loan pricing and structuring; and

(E) discuss the nature of problem loan management.

(6) The student describes laws and regulations used to manage business operations and transactions in the banking services industry. The student is expected to:

(A) explain the elements of a compliance program;

(B) discuss functional areas of a compliance audit;

(C) analyze a compliance plan;

(D) discuss federal regulations of lending and operations functions in banking services, including the ethical and social aspects of those regulations;

(E) discuss e-compliance issues in banking services; and

(F) discuss the responsibilities of regulatory agencies that oversee the banking industry.

(7) The student investigates ways to create and maintain positive, ongoing relationships with banking customers in order to enhance the organization's image. The student is expected to:

(A) explain ways to cultivate positive relationships with customers to enhance company image;

(B) discuss the importance of meeting and exceeding customer expectations; and

(C) describe the relationships that institutions providing banking services have with their communities.

(8) The student maintains, monitors, controls, and plans the use of financial resources to enhance banking performance. The student is expected to:

(A) describe the manner in which banks generate profit and explain measures they take to ensure profitability; and

(B) use financial formulas commonly used in banking to aid in the growth and stability of banking services, including key ratios and banking calculations such as interest and annual percentage rate, capital adequacy, asset quality, management administration, earnings, liquidity, and sensitivity to market risk.

§127.256. Accounting I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Accounting encompasses careers that record, classify, summarize, analyze, and communicate a business's financial information/business transactions for use in management decision making. Accounting includes such activities as bookkeeping, systems design, analysis, and interpretation of accounting information.

(4) In Accounting I, students will investigate the field of accounting, including how it is impacted by industry standards as well as economic, financial, technological, international, social, legal, and ethical factors. Students will reflect on this knowledge as they engage in the process of recording, classifying, summarizing, analyzing, and communicating accounting information. Students will formulate and interpret financial information for use in management decision making.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

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(1) The student communicates an understanding of the accounting industry. The student is expected to:

(A) describe the purpose of accounting and financial reporting;

(B) discuss its impact on industry; and

(C) describe Generally Accepted Accounting Principles (GAAP).

(2) The student uses career planning concepts, tools, and strategies to explore accounting careers. The student is expected to:

(A) discuss the significance of responsibility in accounting such as ethical and social responsibility;

(B) explore careers in accounting, including education requirements, roles, and responsibilities of certified public accountants, general ledger accountants, management accountants, auditors, government accountants, international accountants, forensic accountants, and senior management in accounting; and

(C) identify accounting licensing and certification programs, including professional designations for accountants such as certified public accountant and certified management accountant.

(3) The student uses equations, graphical representations, accounting tools, strategies, and automated systems in real-world situations to maintain, monitor, control, and plan the use of financial resources. The student will complete an accounting cycle for a service business. The student is expected to:

(A) illustrate the accounting cycle;

(B) analyze the effects of transactions on the accounting equation and use T accounts to analyze transactions;

(C) prepare a chart of accounts;

(D) journalize transactions in a general journal;

(E) post journal entries to general ledger accounts;

(F) prepare work sheets;

(G) prepare a trial balance;

(H) journalize and post adjusting and closing entries;

(I) prepare a post-closing trial balance; and

(J) prepare financial statements, including income statements, balance sheets, statements of stockholders' equity, and changes in owners' equity.

(4) The student analyzes cash controls. The student is expected to:

(A) explain cash control procedures such as bank account access, dual control, timely account reconciliations, and security of check stock;

(B) prove cash and reconcile bank statements;

(C) journalize and post entries to establish and replenish petty cash;

(D) journalize and post entries related to banking activities; and

(E) explain the benefits of electronic funds transfer.

(5) The student performs accounting functions for a merchandising business. The student is expected to explain the nature of special journals and recording transactions in special journals.

(6) The student performs accounts payable functions. The student is expected to:

(A) maintain a vendor file;

(B) analyze purchase transactions;

(C) post to an accounts payable subsidiary ledger;

(D) process invoices for payment;

(E) prepare a schedule of accounts payable; and

(F) analyze the impact of accounts payable on the balance sheet and cash flow statements.

(7) The student performs accounts receivable functions. The student is expected to:

(A) explain the nature of accounts receivable;

(B) maintain a customer file for accounts receivable;

(C) analyze sales transactions;

(D) post to an accounts receivable subsidiary ledger;

(E) process sales orders, returns, and allowances;

(F) process customer payments;

(G) process uncollectible accounts;

(H) prepare a schedule of accounts receivable;

(I) determine uncollectible accounts receivable; and

(J) analyze the impact of accounts receivable on the balance sheet and cash flow statements.

(8) The student investigates merchandise inventory to determine the impact on a company's financial position. The student is expected to:

(A) discuss the importance of merchandise inventory to a corporation, including the benefits of determining the most efficient inventory levels;

(B) explain the difference between periodic and perpetual methods of calculating inventory quantities, including the use of inventory records, stock records, and point-of-sale terminals;

(C) calculate the cost of inventory, including the First In, First Out (FIFO) method, Last In, First Out (LIFO) method, weighted average method, and the Gross Profit method of estimating inventory; and

(D) analyze the results of valuing inventory under the FIFO method, LIFO method, weighted average method, and the Gross Profit method of estimating inventory to determine the effect on Net Income and Gross Profit.

(9) The student completes payroll procedures to calculate, record, and distribute payroll earnings and analyzes the impact of these expenses on a company's financial position. The student is expected to:

(A) interpret time cards to calculate hours worked;

(B) maintain employee earnings records and registers;

(C) calculate employee earnings, including gross earnings, withholdings, and net pay;

(D) journalize salary expenses;

(E) calculate employer payroll taxes;

(F) journalize payroll tax expenses;

(G) discuss payroll tax expense forms and reports; and

(H) analyze the impact of salary expenses and payroll tax expense on total expenses and net income.

(10) The student performs specialized accounting functions for a corporation and completes an accounting cycle. The student is expected to:

(A) analyze the articles of incorporation needed to start a corporation;

(B) journalize the issuance of stock;

(C) compute dividends payable on stock;

(D) complete a work sheet for a corporation, including calculating adjustments for depreciation, merchandise inventory, and federal taxes;

(E) prepare financial statements for a corporation, including a balance sheet, an income statement, a statement of stockholders' equity, and a statement of changes in retained earnings;

(F) understand that internal accounting controls exist to ensure the proper recording of financial transactions; and

(G) identify and perform tax accounting functions such as recordkeeping procedures and the nature of corporate tax accounting.

(11) The student describes laws and regulations in order to manage business operations and transactions in accounting. The student is expected to:

(A) describe regulation of accounting;

(B) identify and analyze historical events that led to the regulation of accounting such as the fall of Enron; WorldCom; Tyco International, Ltd.; Adelphia Communications; and Arthur Andersen;

(C) describe the impact of the Sarbanes-Oxley Act of 2002 on internal controls and financial reporting;

(D) describe the role of the Securities and Exchange Commission in regulating the accounting industry;

(E) discuss state regulation of the accounting industry; and

(F) identify and research a case study involving a historically significant compliance or regulatory issue that led to the formation of regulatory agencies or laws, including:

(i) formulating questions to analyze the issue;

(ii) gathering relevant sources;

(iii) evaluating the validity and reliability of those sources; and

(iv) determining which laws and regulations apply.

(12) The student accesses, processes, maintains, evaluates, and disseminates financial information to assist business decision making. The student is expected to:

(A) use accounting technology, including discussing the use of data mining and integrating technology into accounting;

(B) engage in an accounting simulation covering an accounting cycle; and

(C) create a clear and coherent oral presentation that analyzes the results of an accounting simulation covering an accounting cycle and includes the use of correct grammar, spelling, punctuation, and citation of resource materials.

§127.257. Accounting II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Accounting I. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Accounting encompasses careers that record, classify, summarize, analyze, and communicate a business's financial information/business transactions for use in management decision making. Accounting includes such activities as bookkeeping, systems design, analysis, and interpretation of accounting information.

(4) In Accounting II, students will continue the investigation of the field of accounting, including how it is impacted by industry standards as well as economic, financial, technological, international, social, legal, and ethical factors. Students will reflect on this knowledge as they engage in various managerial, financial, and operational accounting activities. Students will formulate, interpret, and communicate financial information for use in management decision making. Students will use equations, graphical representations, accounting tools, spreadsheet software, and accounting systems in real-world situations to maintain, monitor, control, and plan the use of financial resources.

(5) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems

arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student performs accounting functions specific to a corporation. The student is expected to:

(A) analyze articles of incorporation;

(B) communicate methods used to account for the issuance of stock;

(C) compute the number of shares of common stock to be issued on the conversion of convertible preferred stock;

(D) compute dividends payable on stock;

(E) describe internal accounting controls that exist to ensure the proper recording of financial transactions;

(F) produce financial statements, including work sheets, income statements, statements of stockholders' equity, balance sheets, cash flow statements, and statements of changes in retained earnings;

(G) discuss the nature of consolidated financial statements;

(H) discuss the nature of corporate tax accounting; and

(I) perform accounting functions specific to corporate tax accounting, including calculating corporate taxes and target profits and preparing corporate tax returns.

(3) The student discusses and performs accounting functions in a financial statement analysis. The student is expected to:

(A) explain the nature of annual reports;

(B) discuss the use of financial ratios in accounting and explain how this data impacts business decisions;

(C) determine business liquidity, including current ratio, quick ratio, and cash ratio;

(D) calculate business profitability, including gross profit margin, operating profit margin, net profit margin, cash flow margin, return on assets, return on investment, and return on equity, and analyze the relationships between these ratios;

(E) compute business efficiency ratios, including inventory turnover ratio, accounts receivable turnover ratio, accounts payable turnover ratio, average payment period, and average collection period;

(F) determine business operating ratio;

(G) calculate business capital structure ratios, including debt-to-equity ratio and debt service coverage;

(H) compare financial ratios to industry benchmarks and past performance to identify key areas that need to be evaluated and improved; and

(I) formulate and present recommendations based on financial ratio comparisons using spreadsheet software, graphs, and charts that identify business strategies and solutions needed to improve financial performance.

(4) The student describes and employs managerial accounting concepts. The student is expected to:

(A) explain the nature of managerial cost accounting, including costs and cost drivers;

(B) conduct cost-volume-profit analysis, including the use of linear regression data to determine the relationship between production and costs;

(C) identify cost accounting systems such as job order costing, process costing, activity-based costing, and project costing;

(D) calculate the cost of goods sold;

(E) compute overhead rates;

(F) apply overhead to jobs;

(G) describe the nature of cost accounting decision making;

(H) discuss the nature of cost accounting budgets;

(I) explain and create a variance analysis;

(J) discuss the nature of cost allocation;

(K) compute variable costs and contribution margins for a product;

(L) determine relevant costs in make-or-buy and accept-or-reject decisions;

(M) evaluate make-or-buy and accept-or-reject decisions to identify the best solutions for a business;

(N) prepare written recommendations that identify make-or-buy and accept-or-reject solutions using empirical data to support and justify conclusions;

(O) perform cost allocation functions; and

(P) prepare cost of production reports.

(5) The student maintains, monitors, controls, and plans the use of financial resources to ensure business stability. The student is expected to:

(A) describe fundamental financial concepts involved in the management of corporate finances, including the nature of depreciation and cash flows;

(B) analyze the need for efficient capital markets in corporate finance;

(C) explore the capital budgeting process;

(D) perform calculations necessary for capital budget decision making, including:

(i) calculating the initial investment associated with a proposed capital expenditure;

(ii) determining operating cash inflows; and

(iii) determining terminal cash flow;

(E) conduct cash-flow analysis to select an acceptable capital expenditure, including:

(i) interpreting the nature of relevant cash flow-analysis;

(ii) explaining the nature of the payback period;

(iii) calculating the payback period;

(iv) explaining the relationship between the internal rate of return and net present value;

(v) calculating the net present value and future value; and

(vi) calculating the internal rate of return;

(F) explain the role of financial planning in corporate finance, including the financial planning process, short-term operating, and long-term strategic planning;

(G) conduct cash planning, including:

(i) explaining the use of cash budgets;

(ii) coping with uncertainty in cash budgets;

(iii) preparing a cash budget; and

(iv) evaluating a cash budget;

(H) conduct profit planning, including pro forma income statements and balance sheets;

(I) define and describe the nature of short-term financial management;

(J) explain the role of valuation in making appropriate financial decisions for a company, including:

(i) discussing the role of project valuation in capital allocation decisions;

(ii) comparing methods for valuing flexibility; and

(iii) discussing the valuation implications in business finance;

(K) use capital market securities to secure financing for a company, including:

(i) analyzing models and methods to determine the best financing option for a company;

(ii) analyzing the nature of corporate bonds;

(iii) analyzing and determining the cost of long-term debt;

(iv) describing the issuance of stock from a corporation;

(v) comparing and contrasting preferred stock and common stock;

(vi) calculating the cost of preferred stock and common stock; and

(vii) computing leverage and debt to equity ratios;

(L) explain the role of dividends in corporate finance, including forms of dividends and reinvestment plans;

(M) describe the effect of a firm's dividend decisions on its external financing requirements;

(N) illustrate the residual theory of dividends;

(O) describe the impact of dividends on the value of the firm;

(P) explain the nature of a dividend policy;

(Q) explain factors to consider when deciding on the form of dividend distribution; and

(R) analyze ownership change transactions, including:

(i) comparing mergers and acquisitions;

(ii) explaining the nature of hostile takeovers;

(iii) discussing issues that arise from mergers and acquisitions;

(iv) explaining methods for evaluating potential merger/acquisition targets;

(v) evaluating potential merger and acquisition targets; and

(vi) analyzing the nature of restructurings.

(6) The student describes laws and regulations in order to manage business operations and transactions in accounting. The student is expected to:

(A) describe and discuss regulation of accounting, including:

(i) the impact of the Sarbanes-Oxley Act of 2002 on accounting;

(ii) the role of the Securities and Exchange Commission in regulating the accounting industry;

(iii) the state regulation of the accounting industry; and

(iv) the impact of International Financial Reporting Standards (IFRS) versus Generally Accepted Accounting Principles (GAAP); and

(B) identify and research a case study involving a fraud, compliance, or regulatory issue or possible scenario, including:

(i) formulating questions to analyze the issue;

(ii) gathering relevant sources;

(iii) evaluating the validity and reliability of those sources;

(iv) identifying and communicating which laws and regulations apply;

(v) gathering data that supports evidence of fraud or non-compliance with regulations; and

(vi) creating a clear and coherent presentation, including the use of correct grammar, spelling, punctuation, and citation of resource materials.

(7) The student accesses, processes, maintains, evaluates, and disseminates financial information to assist business decision making. The student is expected to:

(A) use technology to acquire information such as the use of data mining and automated financial programs into accounting; and

(B) create a clear and coherent oral and written presentation that includes the use of correct grammar, spelling, punctuation, and citation of resource materials on a current topic in accounting using concepts learned in this course.

§127.258. Financial Analysis (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Accounting I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Financial Analysis, students will apply knowledge and technical skills in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students will develop analytical skills by actively evaluating financial results of multiple businesses, interpreting results for stakeholders, and presenting strategic recommendations for performance improvement.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes accounting systems to examine their contribution to the fiscal stability of businesses. The student is expected to:

(A) describe the nature and scope of accounting; and

(B) examine accounting procedures for tracking money flow and determining financial status through the preparation of financial statements.

(2) The student explores the use of financial resources. The student is expected to describe tools, strategies, and systems used to maintain, monitor, control, and plan the use of financial resources.

(3) The student demonstrates mathematics knowledge and skills required when interpreting business operation documents. The student is expected to apply data to solve a problem; construct charts, tables, and graphs; and analyze data.

(4) The student analyzes financial resources to ensure business solvency. The student is expected to:

(A) describe the nature of budgets;

(B) determine relationships among total revenue, marginal revenue, output, and profit;

(C) calculate financial ratios;

(D) interpret financial statements;

(E) describe types of financial statement analyses such as ratio analysis and trend analysis; and

(F) identify problems and issues with financial statements.

(5) The student calculates business ratios to evaluate company performance. The student is expected to:

(A) discuss the use of financial ratios in business finance;

(B) use multiple ratios to evaluate company performance, including income, profitability, operating performance, liquidity, working capital, bankruptcy prediction, long-term analysis, coverage, debt, cash flow indicator, and investment valuation; and

(C) discuss the use of benchmarks in analyzing ratios.

(6) The student analyzes a financial statement. The student is expected to:

(A) discuss the analysis of a company's financial situation using its financial statements;

(B) describe external forces affecting a company's value;

(C) explain how value is created for a company;

(D) understand and interpret financial statement notes; and

(E) evaluate results from the aspect of management, creditors, and investors.

(7) The student examines the nature and scope of risk management in finance. The student is expected to:

(A) discuss the nature of risk control such as internal and external controls;

(B) explain ways to assess risk;

(C) describe the importance of auditing risk control;

(D) discuss risk-control systems;

(E) describe the use of technology in risk management;

(F) discuss legal considerations affecting risk management;

(G) discuss the relationship between risk and business objectives; and

(H) evaluate a risk-management program.

(8) The student develops an understanding and working knowledge of annual reports. The student is expected to:

(A) discuss the objective of an annual report;

(B) identify the components of an annual report;

(C) identify laws and regulations that are applied to annual reports; and

(D) create an annual report.

(9) The student explores the role of ethics in finance. The student is expected to:

(A) explain the nature of business ethics;

(B) discuss the role of ethics in finance; and

(C) analyze the activities of Enron Corporation that led to the company's downfall.

(10) The student employs critical-thinking skills independently and in teams to solve problems and make decisions. The student is expected to:

(A) identify common tasks that require employees to use problem-solving skills;

(B) analyze elements of a financial problem to develop creative solutions;

(C) create and evaluate ideas, proposals, and solutions to financial problems;

(D) analyze financial information to determine its value to the problem-solving task; and

(E) identify and evaluate alternative financial solutions using a variety of problem-solving and critical-thinking skills.

(11) The student performs a case study analysis of a specific company to apply the concepts learned in the course and present the findings. The student is expected to:

(A) summarize the company's background;

(B) analyze the company's history, development, and growth;

(C) identify the company's strengths and weaknesses, internally;

(D) describe the external environment;

(E) evaluate the strengths, weaknesses, opportunities, and threats (SWOT) analysis;

(F) examine the corporate and business level strategy;

(G) investigate the structure and control systems; and

(H) formulate recommendations.

§127.259. Statistics and Business Decision Making (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Algebra II. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Statistics and Business Decision Making is an introduction to statistics and the application of statistics to business decision making. Students will use statistics to make business decisions. Students will determine the appropriateness of methods used to collect data to ensure conclusions are valid.

(4) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student uses career planning concepts, tools, and strategies to explore a career in the area of risk management. The student is expected to:

(A) compare and contrast the fundamentals of risk management, including the reasons for and benefits of risk management;

(B) discuss the role of ethics and responsibility in risk management; and

(C) compare and contrast roles, responsibilities, licensing, and certification programs of careers related to managing and analyzing personal and corporate financial portfolios such as financial planners, financial managers, financial analysts, controllers, risk managers, cash managers, treasurers, and chief financial officers.

(3) The student understands and demonstrates the use of statistics in business areas, including accounting, economics, finance, management, and marketing. The student is expected to:

(A) evaluate the use of statistics in accounting such as forecasting consumption, earnings, cash flows, book value, and allowance for doubtful accounts;

(B) evaluate how statistics are used in economics such as reports for labor market, trade balance, Gross Domestic Product, unemployment, and consumer spending;

(C) evaluate how statistics are used in finance such as the use by financial intermediaries or in the evaluation of investments, securities, derivatives, futures, or options;

(D) evaluate how statistics are used in management such as in the evaluation of production efficiency, production quantity, quality control, workforce trends, staffing issues, and employee satisfaction; and

(E) evaluate how statistics are used in marketing such as reports for projected market share, advertising effectiveness, sales effectiveness, brand loyalty, spending habits, and customer satisfaction.

(4) The student understands and demonstrates the ethical and responsible use of statistics in business. The student is expected to evaluate how statistics are used in accounting, economics, finance, management, and marketing.

(5) The student evaluates risk-management strategies and techniques in corporate finance to maximize profit and minimize loss. The student is expected to:

(A) manage risk to protect business stability;

(B) analyze the relationship between risk management and operations; and

(C) evaluate various risk-management strategies and techniques, including the use of insurance, stock, derivatives, and options.

(6) The student evaluates financial information using statistical analysis to assist business decision making using appropriate software. The student is expected to:

(A) communicate the value of statistical information in a variety of business disciplines and environments;

(B) assess statistical information portrayed in areas such as advertising, investments and securities, human resource management, and economics;

(C) generate a spreadsheet to collect, collate, organize, and analyze quantitative data; and

(D) use spreadsheets and graphical techniques to present data in a manner that is understood by and meaningful to colleagues and clients.

(7) The student understands and demonstrates the defining and collecting of data. The student is expected to:

(A) define the types of variables and the measurement scales of variables;

(B) understand the collecting of data and its source;

(C) understand populations and samples;

(D) understand sampling methods; and

(E) understand and define survey error types.

(8) The student will understand and demonstrate the organization and visualization of data. The student is expected to organize and visualize categorical data and numerical data.

(9) The student understands and demonstrates the use of descriptive measures. The student is expected to:

(A) understand and calculate the central tendency of the data set using mean, median, and mode;

(B) understand and determine the variation of the data set using range, sample variance, sample standard deviation, population variance, population standard deviation, coefficient of the variation, and Z score; and

(C) understand and demonstrate the measure of shape of the data set using skewness, symmetry, and kurtosis.

(10) The student understands and demonstrates the use of probability. The student is expected to:

(A) define event, compound event, complement of an event, sample space, marginal probability, conditional probability, independence, multiplication rule, multiplication rule for independent events, probability of an event, impendence, and Bayes' Theorem; and

(B) define and calculate simple probability, compound probability, marginal probability, general addition rule, marginal probability using the multiplication rule, and probability with Bayes' Theorem.

(11) The student understands and demonstrates the use of probability distribution for discrete variables. The student is expected to understand and demonstrate the use of the uniform distribution, the binomial distribution, and the Poisson distribution.

(12) The student understands and demonstrates the use of probability distribution for continuous variables. The student is expected to understand and demonstrate the use of the normal distribution, uniform distribution, and exponential distribution.

(13) The student understands and demonstrates the use of sampling distribution, sampling distribution of the mean, and the central limit theorem. The student is expected to:

(A) calculate the population mean and population standard deviation;

(B) calculate standard error of the mean; and

(C) calculate the Z- and X-bar for the sampling distribution of the mean.

(14) The student understands and demonstrates the use and construction of confidence intervals. The student is expected to:

(A) construct a confidence interval for the mean for a known and unknown population standard deviation; and

(B) evaluate ethical issues associated with confidence intervals.

(15) The student understands and demonstrates hypothesis testing for one sample tests and two sample tests. The student is expected to:

(A) understand and demonstrate the use of hypothesis testing, null hypothesis, and alternative hypothesis;

(B) create a null hypothesis and alternative hypothesis;

(C) understand and demonstrate the use of Type I error and Type II error;

(D) calculate the level of significance and calculate beta risk;

(E) understand and demonstrate the use of the complements of Type I error and Type II error by calculating the confidence coefficient and the power of a statistical test;

(F) understand and calculate Z test for the mean;

(G) understand and demonstrate a one-tail test hypothesis and its associated critical values and p-value; and

(H) understand and demonstrate a two-tail test hypothesis and its associated critical values and p-value.

(16) The student understands analysis of variance. The student is expected to understand and demonstrate the analysis of more than two populations.

(17) The student understands and demonstrates the use of chi-square test. The student is expected to use a chi-square test.

(18) The student understands and demonstrates the use of nonparametric test. The student is expected to use nonparametric tests such as the Wilcoxon Sum test.

(19) The student understands simple linear regression. The student is expected to:

(A) understand and demonstrate the use of various types of regression models;

(B) create the regression equation; and

(C) make predictions based on regression models.

(20) The student understands an introduction to multivariable regression: The student is expected to use a multivariable regression model.

(21) The student understands time series analysis and forecasting. The student is expected to:

(A) understand times series models;

(B) understand trend component;

(C) understand seasonal component; and

(D) understand cyclical component.

(22) The student demonstrates an understanding of a postsecondary plan. The student is expected to:

(A) understand educational, military, and current job opportunities; and

(B) create a postsecondary plan that includes topics such as application requirements; testing requirements; certification requirements; associated deadlines; associated costs, including living expenses; job prospects and opportunities; beginning earnings; expected future earnings; and resumes and cover letters.

§127.260. Advertising (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Advertising is designed as a comprehensive introduction to the principles and practices of advertising. Students will gain knowledge of techniques used in current advertising, including print,

broadcast, and digital media. The course explores the social, cultural, ethical, and legal issues of advertising, historical influences, strategies, media decision processes as well as integrated marketing communications, and careers in advertising and sales promotion. The course provides an overview of how communication tools can be used to reach target audiences and increase consumer knowledge.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the importance of marketing as well as the functions of marketing. The student is expected to:

(A) recognize marketing functions and how they relate to advertising;

(B) explain how each component of the marketing mix contributes to successful advertising;

(C) identify the importance of target markets; and

(D) research trends affecting advertising marketing.

(2) The student knows the impact and value of diversity. The student is expected to:

(A) examine elements of culture and discuss the need for understanding cultural diversity; and

(B) identify how diversity affects advertising strategy.

(3) The student knows the nature and scope of advertising marketing. The student is expected to:

(A) demonstrate knowledge of the history of advertising as an industry and how it relates to today's marketplace;

(B) discuss major environmental influences that impact advertising;

(C) research the advantages and disadvantages of the types of advertising; and

(D) illustrate how international marketing affects the advertising industry.

(4) The student knows that advertising requires knowledge of demographics. The student is expected to:

(A) explain how the use of demographics has influenced the industry;

(B) differentiate between buying habits and buying preferences; and

(C) explain the impact of multiculturalism and multigenerationalism on advertising marketing activities.

(5) The student knows that a career in advertising requires knowledge of the industry. The student is expected to:

(A) research careers in the advertising industry;

(B) identify businesses related to advertising; and

(C) identify the role of professional organizations, trade associations, and labor unions in the advertising industry.

(6) The student understands the importance of selling in the advertising industry. The student is expected to:

(A) explain how selling contributes to the success of an advertising agency; and

(B) employ the steps of selling, including prospecting, pre-approach, approach, presentation, overcoming objections, close, and follow-up.

(7) The student evaluates and uses information resources to research careers in advertising and sales. The student is expected to:

(A) use multimedia resources such as the Internet to research careers in advertising and sales; and

(B) identify businesses related to advertising and sales.

(8) The student develops and delivers presentations using appropriate media to engage and inform audiences. The student is expected to:

(A) prepare oral presentations to provide information for specific purposes and audiences;

(B) identify and prepare support materials that will enhance an oral presentation; and

(C) deliver an oral presentation that sustains listener attention and interest.

(9) The student knows the marketing-information system. The student is expected to:

(A) explain characteristics and purposes of a marketing-information system;

(B) identify benefits and limitations of marketing research; and

(C) analyze data used to make accurate forecasts.

(10) The student knows pricing policies, objectives, and strategies. The student is expected to:

(A) compare and contrast pricing policies; and

(B) analyze the price of an advertising marketing product.

(11) The student knows the elements and processes of product planning. The student is expected to:

(A) describe stages of new-product planning;

(B) analyze product mix; and

(C) identify stages of the product life cycle for new or existing advertising marketing plans.

(12) The student knows that successful marketers must develop, implement, and evaluate a promotional plan. The student is expected to:

(A) identify components of the promotional mix such as advertising, visual merchandising, and personal selling;

(B) demonstrate visual merchandising techniques for advertising marketing goods, services, or ideas; and

(C) analyze a promotional plan for effectiveness.

(13) The student knows how technology affects advertising. The student is expected to:

(A) examine how social media contributes to advertising; and

(B) research the use of technology in advertising.

(14) The student understands how media planning should achieve marketing objectives. The student is expected to:

(A) compare and contrast the different forms of media; and

(B) distinguish between the four components of marketing, including paid, earned, shared, and owned (PESO).

§127.264. Fashion Marketing (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Fashion Marketing is designed to provide students with knowledge of the various business functions in the fashion industry. Students in Fashion Marketing will gain a working knowledge of promotion, textiles, merchandising, mathematics, selling, visual merchandising, and career opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the importance and functions of marketing. The student is expected to:

(A) describe each marketing function and how it relates to the fashion industry;

(B) describe advantages and disadvantages of market segmentation and mass marketing; and

(C) research trends affecting fashion marketing.

(2) The student knows the impact and value of diversity. The student is expected to:

(A) explain elements of culture and the need for understanding cultural diversity; and

(B) identify how diversity affects fashion.

(3) The student demonstrates the use of oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) create presentations using appropriate media to inform audiences; and

(B) exhibit public relations skills to increase customer satisfaction.

(4) The student knows that distribution channel members facilitate the movement of products. The student is expected to:

(A) explain channels of distribution for fashion products; and

(B) describe activities of each channel member in the fashion industry.

(5) The student knows the marketing-information system. The student is expected to:

(A) define the purpose of marketing-information systems;

(B) identify limitations of marketing research;

(C) explain how inventory can be managed by using tools such as point-of-sale systems, just-in-time strategies, and radio frequency identification (RFID) technology; and

(D) analyze data used to make accurate retail forecasts.

(6) The student knows concepts and strategies used in determining and adjusting prices to maximize return and meet customers' perceptions of value. The student is expected to:

(A) employ pricing strategies to determine prices;

(B) develop a sample credit policy that could be a useful fashion marketing strategy; and

(C) analyze the price of a fashion product.

(7) The student knows merchandising concepts and processes used in obtaining, developing, maintaining, and improving a product or service to respond to marketing opportunities. The student is expected to:

(A) use assortment-mix strategies to create maximum mix of products at minimum cost;

(B) perform buying activities to obtain products for resale;

(C) analyze vendor performance to choose vendors and merchandise; and

(D) position products and services to acquire a desired business image.

(8) The student knows that a successful marketer must communicate information on retail products, services, images, and ideas to achieve a desired outcome. The student is expected to:

(A) demonstrate methods of advertising to communicate promotional messages to targeted audiences;

(B) use special events to increase sales;

(C) display visual merchandising techniques to increase interest in product offerings;

(D) implement display techniques to attract customers and increase sales potential; and

(E) manage promotional activities to maximize return on promotional efforts.

(9) The student knows that purchasing occurs as steps in a continuous cycle. The student is expected to:

(A) distinguish between buying for resale and buying for organizational use; and

(B) demonstrate knowledge of the fashion buying process such as preparing a buying plan, completing purchase orders, and processing invoices.

(10) The student demonstrates an understanding of concepts and actions to determine client needs and wants. The student is expected to:

(A) acquire product knowledge to communicate product benefits and to ensure appropriateness of product for the customer; and

(B) employ sales processes and techniques to enhance customer relationships and to increase the likelihood of making sales.

(11) The student knows the nature and scope of fashion. The student is expected to:

(A) explain the importance of fashion;

(B) demonstrate knowledge of fashion history and how it relates to today's fashions;

(C) distinguish among fashion terms such as fashion, style, and design;

(D) list major environmental influences on fashion demand;

(E) research fashion information;

(F) explain legislation that impacts the fashion industry; and

(G) describe how international marketing has affected the fashion industry.

(12) The student knows that a career in fashion marketing requires knowledge of the industry. The student is expected to:

(A) research careers in the fashion industry;

(B) list and describe businesses related to the fashion industry; and

(C) delineate components of softlines such as sportswear, footwear, and men's and children's fashions.

(13) The student demonstrates mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities. The student is expected to:

(A) apply data and measurements to solve a problem; and

(B) analyze mathematical problem statements for missing or irrelevant data.

§127.265. Social Media Marketing (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance or any marketing course. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Social Media Marketing is designed to look at the rise of social media and how marketers are integrating social media tools in their overall marketing strategy. The course will investigate how the marketing community measures success in the new world of social media. Students will manage a successful social media presence for an organization, understand techniques for gaining customer and consumer buy-in to achieve marketing goals, and properly select social media platforms to engage consumers and monitor and measure the results of these efforts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the nature and scope of social media marketing. The student is expected to:

(A) differentiate between in-bound marketing and outbound marketing;

(B) explain the nature of in-bound marketing;

(C) identify the various social media platforms and purposes;

(D) define social media marketing;

(E) identify and describe significant trends in the development of social media;

(F) understand how the development of social media has shaped online media and communications; and

(G) describe the social media marketing ecosystem and its impact on traditional marketing strategy.

(2) The student knows the legalities, ethical implications, and risks associated with social media marketing. The student is expected to:

(A) apply legal boundaries and concepts affecting social media;

(B) analyze ethical guidelines and codes of ethics to explain how or why they are important to social media organizations;

(C) identify risk factors associated with social media marketing;

(D) explain the concept of real-time marketing; and

(E) discuss the ramifications of real-time marketing.

(3) The student knows how to critically evaluate social media and digital marketing tools. The student is expected to:

(A) evaluate and understand how social media has influenced the function of marketing;

(B) evaluate and understand how social media has evolved and influenced the way people communicate;

(C) analyze and evaluate the influence of social media on individuals and how individuals influence social media; and

(D) identify potential risks, advantages, and limitations of digital marketing tools.

(4) The student knows that strategic planning is essential to the success of social media marketing. The student is expected to:

(A) define the social media marketing process;

(B) understand participation as a key element of the marketing mix;

(C) understand how to integrate social media marketing into the Integrated Marketing Plan to promote brand/company awareness; and

(D) develop a social media marketing plan.

(5) The student demonstrates how to use social media as a marketing tool. The student is expected to:

(A) analyze, evaluate, and communicate information effectively through the use of social networking platforms such as Facebook, LinkedIn, and Twitter as marketing tools;

(B) analyze, evaluate, and communicate information effectively through the use of social publishing platforms such as Instagram, Pinterest, and Tumblr as marketing tools;

(C) analyze, evaluate, and communicate information effectively through the use of social entertainment platforms such as YouTube, Flickr, and Vine as marketing tools;

(D) analyze, evaluate, and communicate information effectively through the use of social commerce platforms such as Groupon, Yelp!, and 4Square as marketing tools; and

(E) analyze, evaluate, and communicate information effectively through the use of emerging social media.

(6) The student knows how to use mobile marketing as a marketing tool. The student is expected to:

(A) understand the nature and scope of mobile marketing;

(B) identify advantages and disadvantages of mobile marketing; and

(C) demonstrate the ability to use mobile marketing tools such as Short Message Service (SMS)/Multimedia Messaging Service (MMS), Quick Response (QR) codes, mobile phone applications, and mobile optimized websites.

(7) The student measures the success of a social media marketing plan. The student is expected to:

(A) explain the role of social media in marketing research;

(B) understand the nature and scope of social media analytics; and

(C) measure the success of social media marketing strategies using analytics data.

(8) The student knows that a career in social media marketing requires knowledge of the industry. The student is expected to:

(A) research and describe careers in the field of social media marketing; and

(B) research employment trends in the field of social media marketing.

§127.266. Sports and Entertainment Marketing (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Sports and Entertainment Marketing will provide students with a thorough understanding of the marketing concepts and theories that apply to sports and entertainment. The areas this course will cover include basic marketing concepts, publicity, sponsorship, endorsements, licensing, branding, event marketing, promotions, and sports and entertainment marketing strategies.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows business concepts and explains how business satisfies economic needs. The student is expected to:

(A) categorize business activities such as production, marketing, management, or finance;

(B) analyze the interdependence each business activity has with marketing;

(C) demonstrate an understanding of the forms of business; and

(D) demonstrate an understanding of the concept of economic impact.

(2) The student knows the importance of marketing as well as the functions of marketing. The student is expected to:

(A) explain the marketing concept as it relates to sports and entertainment;

(B) describe each marketing function and how it relates to sports and entertainment;

(C) explain how each component of the marketing mix contributes to successful marketing;

(D) express the importance of target markets;

(E) describe advantages and disadvantages of market segmentation and mass marketing;

(F) explain the importance of market research and analysis;

(G) illustrate the concept of positioning; and

(H) describe how international marketing has affected the sports and entertainment industry.

(3) The student knows that distribution channel members facilitate the movement of products. The student is expected to:

(A) explain channels of distribution for sports and entertainment marketing products; and

(B) describe activities of each channel member.

(4) The student knows how sports and entertainment businesses achieve profitability. The student is expected to:

(A) evaluate sources of financial information, including budgets, balance sheets, and income statements;

(B) explain the concept and importance of revenue streams; and

(C) explain the relationship of profit and loss to sports and entertainment products.

(5) The student knows the marketing-information system. The student is expected to:

(A) use a marketing-information system to make informed business decisions; and

(B) analyze data used to make accurate forecasts and informed business decisions.

(6) The student knows pricing strategies. The student is expected to:

(A) compare and contrast pricing strategies; and

(B) analyze the price of sports and entertainment marketing products.

(7) The student knows the elements and processes of product planning. The student is expected to:

(A) describe stages of new-product planning;

(B) illustrate the product mix; and

(C) identify stages of the product life cycle for new or existing sports or entertainment marketing products.

(8) The student knows that successful marketers must develop, implement, and evaluate a promotional plan. The student is expected to:

(A) identify, create, and demonstrate elements of the promotional mix; and

(B) analyze a promotional plan for effectiveness.

(9) The student knows that various types of risks impact business activities. The student is expected to:

(A) identify business risks that are commonly associated with sports and entertainment business; and

(B) explain methods a sports and entertainment business uses to control risks.

(10) The student identifies the role of selling and emphasizes its importance in a sports and entertainment business. The student is expected to:

(A) explain how selling contributes to economic activity;

(B) describe the process of selecting and merchandising sports and entertainment products;

(C) demonstrate steps in the selling process using sports and entertainment products;

(D) explain the importance of ticket sales; and

(E) develop a ticket sales strategy for a sports and entertainment product.

(11) The student identifies the nature and scope of sports and entertainment marketing. The student is expected to:

(A) research and explain the history of sports and entertainment as an industry and how it impacts today's marketplace;

(B) identify sports and entertainment marketing terms;

(C) list major environmental influences on sports and entertainment demand;

(D) define sports marketing and entertainment marketing;

(E) explain topics, including legislation and ethics, that impact sports and entertainment marketing;

(F) research trends and emerging technologies affecting the sports and entertainment marketing industry; and

(G) explain the concept of competition for discretionary income.

(12) The student knows that a career in sports and entertainment marketing requires knowledge of demographics. The student is expected to:

(A) explore how the use of demographics has influenced the industry; and

(B) differentiate between buying habits and buying preferences.

(13) The student knows that a career in sports and entertainment marketing requires knowledge of the industry. The student is expected to:

(A) research careers in the sports and entertainment marketing industry;

(B) list and describe businesses related to sports and entertainment; and

(C) distinguish between the different roles in sports and entertainment marketing.

(14) The student identifies reasons a sports and entertainment business would use marketing. The student will be expected to:

(A) describe and simulate activities to market a sports and entertainment product;

(B) understand why sports and entertainment businesses use marketing;

(C) understand the importance of and key components of a marketing plan;

(D) explain and give examples of marketing using sports and entertainment; and

(E) explain and give examples of marketing of sports and entertainment.

(15) The student understands the impact event marketing has on the sports and entertainment industry. The student is expected to:

(A) define event marketing;

(B) explain and provide examples of how event marketing attracts all three components of the event triangle (event, sponsor, and spectator); and

(C) develop an effective event marketing strategy for a sports and entertainment product.

(16) The student has an understanding of sponsorship proposals and contracts. The student is expected to:

(A) identify components and content for a sponsorship proposal;

(B) define and explain sponsorship issues;

(C) categorize costs associated with a sponsorship;

(D) identify types of sponsorship sales and relationship development;

(E) examine benefits of sponsorship opportunities; and

(F) explain laws that may affect a sponsorship agreement.

(17) The student has an understanding of endorsement contracts. The student is expected to:

(A) identify components of endorsement contracts;

(B) discuss issues related to celebrity behavior on endorsements; and

(C) research the rationale for a business to engage in endorsement contracts.

(18) The student understands the importance of branding. The student is expected to:

(A) define branding;

(B) differentiate between types of brands;

(C) identify examples of brand equity and brand extension in sports and entertainment;

(D) explain the value in building a strong brand; and

(E) determine the characteristics of a successful brand.

(19) The student understands the importance of licensing. The student is expected to:

(A) define licensing;

(B) distinguish between licensor and licensee;

(C) explain the advantages and disadvantages of licensing; and

(D) identify examples of licensing in sports and entertainment.

(20) The student knows the effect the fan experience has on the success of a sports business. The student is expected to:

(A) explain how promoting and implementing a positive fan experience impacts revenues;

(B) describe situations that impact the fan experience;

(C) describe the concept of the fan/spectator experience;

(D) define the term game operations;

(E) explain the role of game entertainment in the sports business;

(F) define game attractiveness;

(G) identify game involvement activities that enhance fan experience; and

(H) create a game operations plan to increase game attractiveness.

(21) The student understands the importance of effectively communicating information with customers, media, and fans. The student is expected to:

(A) explain why communications in sports and entertainment are important;

(B) understand issues that impact the business of sports and entertainment;

(C) define media;

(D) understand the importance of media rights;

(E) define publicity;

(F) differentiate between publicity, public relations, media relations, and community relations;

(G) create a press release;

(H) create a press kit; and

(I) simulate a press conference.

(22) The student understands the strategies of successful entertainment marketing. The student is expected to:

(A) discuss the different kinds of entertainment distribution;

(B) identify strategies to market entertainment products; and

(C) explain the promotional value of entertainment awards.

§127.268. Advanced Marketing (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: one credit from the courses in the Business, Marketing, and Finance Career Cluster. Recommended prerequisite: Practicum in Marketing. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) In Advanced Marketing, students will gain knowledge and skills that help them become proficient in one or more of the marketing functional areas. Students will illustrate appropriate management and research skills to solve problems related to marketing. This course covers technology, communication, and customer-service skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops a project on a topic related to the field of marketing and uses in-depth research to present findings. The student is expected to:

(A) identify a topic to investigate or research;

(B) consult with an expert to investigate and discover possible solutions to an issue; and

(C) present findings to an audience that includes experts in the field.

(2) The student knows the concepts of market and market identification. The student is expected to:

(A) perform a market analysis;

(B) conduct a strengths, weaknesses, opportunities, and threats (SWOT) analysis for use in the marketing planning process; and

(C) create a marketing plan.

(3) The student understands the roles of management. The student is expected to:

(A) differentiate among levels of management;

(B) compare and contrast management styles;

(C) identify effective recruitment, selection, training and development, and performance evaluation techniques;

(D) demonstrate an understanding of the process used to train and monitor employees to ensure compliance with laws, regulations, and self-regulatory measures;

(E) model techniques to use in difficult customer relations situations; and

(F) analyze factors involved in facilities design, maintenance, and improvement.

(4) The student identifies the need for professional and career development. The student is expected to:

(A) identify types of media available such as LinkedIn and industry-specific publications; and

(B) explain the role of professional organizations and networking.

(5) The student integrates listening, reading, speaking, writing, and nonverbal communication skills effectively. The student is expected to:

(A) communicate effectively in a business management setting; and

(B) understand appropriate protocol in a business meeting.

(6) The student knows the importance of emerging trends and technologies in marketing. The student is expected to:

(A) discuss trends affecting marketing; and

(B) research emerging technologies in marketing.

(7) The student knows the impact and value of diversity. The student is expected to:

(A) portray how cultural diversity affects marketing; and

(B) discover legal responsibilities regarding diversity.

(8) The student identifies international economic factors that affect marketing planning. The student is expected to:

(A) identify strategies for entering international markets;

(B) illustrate cultural, economic, and political factors to consider when engaging in international trade;

(C) distinguish between imports and exports;

(D) explain the interdependence of nations;

(E) analyze advantages and disadvantages of international trade;

(F) determine the impact of global trade on business decision making;

(G) describe the determinants of exchange rates and their effects on the domestic economy;

(H) discuss the impact of cultural and social environments on global trade; and

(I) interpret labor issues associated with global trade.

(9) The student identifies marketing research as a specific inquiry to solve a problem. The student is expected to:

(A) express the importance of marketing research;

(B) describe areas of marketing research such as advertising, product, market, and sales;

(C) explain the purpose of test marketing;

(D) identify trends affecting marketing research; and

(E) communicate benefits and limitations of marketing research.

(10) The student knows the components of the marketing research process in order to analyze demand, forecast sales, and make other decisions. The student is expected to:

(A) state the marketing research process;

(B) identify methods of collecting data;

(C) describe ways technology is used in research;

(D) design and implement a study;

(E) analyze and interpret data collected;

(F) develop a research report; and

(G) make recommendations based on the research report.

(11) The student knows the importance of branding and extended product features. The student is expected to:

(A) define branding elements;

(B) distinguish between warranties and guarantees; and

(C) design a product package, brand, and label.

(12) The student analyzes the laws and regulations that affect products. The student is expected to:

(A) differentiate among laws, regulations, and self-regulatory measures for products; and

(B) clarify how business is affected by government regulation of consumer protection.

(13) The student knows that public relations and publicity can be used to promote a business or organization. The student is expected to:

(A) prepare publicity materials;

(B) distinguish among activities that would encourage positive public relations; and

(C) analyze potential impact of publicity and offer possible strategies for dealing with the impact.

(14) The student knows that the purchasing process occurs in a continuous cycle. The student is expected to:

(A) explain the process of identifying needs;

(B) describe the process of selecting suppliers and sources;

(C) explain the negotiation process;

(D) explain how goods and services are ordered; and

(E) distinguish strategies used in evaluating purchases.

(15) The student knows that a buying plan identifies products to be offered for sale for a particular period of time. The student is expected to:

(A) describe and calculate merchandising-related discounts;

(B) interpret vendor terms and policies; and

(C) calculate the final cost of a product.

(16) The student knows the important role each employee plays in providing exceptional customer service. The student is expected to:

(A) identify employee management actions and attitudes that result in customer satisfaction;

(B) describe how customer service and follow-up are major factors for success in marketing; and

(C) demonstrate effective communication with customers to foster positive relationships that enhance company image.

(17) The student demonstrates the management of selling activities. The student is expected to:

(A) explain sales and financial quotas;

(B) identify types of information contained in sales records; and

(C) exhibit proper procedures for maintaining sales records.

(18) The student prepares for employment in a particular career field. The student is expected to:

(A) identify training, education, and certification requirements for occupational choice; and

(B) research career-related training or degree programs.

(19) The student demonstrates mathematics knowledge and skills required to pursue the full-range of postsecondary education and career opportunities. The student is expected to:

(A) demonstrate use of relational expressions such as equal to, not equal to, greater than, and less than;

(B) apply data and measurements to solve a problem;

(C) analyze mathematical problem statements for missing or irrelevant data;

(D) construct charts, tables, and graphs from functions and data; and

(E) analyze data when interpreting operational documents.

(20) The student applies ethical reasoning to a variety of workplace situations in order to make ethical decisions. The student is expected to:

(A) weigh alternative responses to workplace situations based on legal responsibilities and employer policies;

(B) weigh alternative responses to workplace situations based on personal or professional ethical responsibilities;

(C) identify and explain personal and long-term consequences of unethical or illegal behaviors; and

(D) identify the most appropriate response to workplace situations based on legal and ethical considerations.

(21) The student knows the importance of teamwork, leadership, and organizational skills. The student is expected to:

(A) specify how teams function;

(B) use teamwork to solve problems;

(C) differentiate between the roles of team leaders and team members;

(D) analyze characteristics of good leaders;

(E) identify employers' expectations and appropriate work habits;

(F) define discrimination, harassment, and inequality;

(G) demonstrate time-management techniques to develop and maintain schedules and meet deadlines;

(H) illustrate how teams measure their results; and

(I) demonstrate methods to recognize and reward team performance.

§127.294. Business Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 9-12 as a corequisite course for students participating in a coherent sequence of career and technical education courses in the Business, Marketing, and Finance Career Cluster. This course provides an enhancement opportunity for students to develop the additional skills necessary to pursue industry certification. Corequisite: any course in the Business, Marketing, and Finance Career Cluster. Recommended corequisite: Foundations of Business Communication and Technologies or Business Communication and Technologies. This course must be taken concurrently with a corequisite course from the Business, Marketing, and Finance Career Cluster and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with the corequisite course to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Business Lab is designed to provide students an opportunity to further enhance skills of previously studied knowledge and skills and may be used as an extension of Foundations of Business Communication and Technologies or Business Communication and Technologies; it is a recommended corequisite course and may not be offered as a stand-alone course. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies. Students develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those that contain the phrase "such as" are intended as possible illustrative samples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills required by business and industry. The student is expected to:

(A) communicate effectively with others using oral and written skills;

(B) demonstrate collaboration skills through teamwork;

(C) demonstrate professionalism by conducting oneself in a manner appropriate for the profession and workplace;

(D) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(E) comply with all applicable rules, laws, and regulations;

(F) demonstrate time-management skills by prioritizing tasks, following schedules, and tending to goal-relevant activities in a way that uses time wisely and optimizes efficiency and results; and

(G) pursue appropriate licensing, certification, and/or credentialing requirements relevant to the business field.

(2) The student develops an elevated aptitude for the essential skills listed for the recommended corequisite course(s). The student is expected to:

(A) demonstrate deeper understanding of related course requirements;

(B) develop mastery of hands-on skills at an industry accepted standard; and

(C) exhibit progress toward achieving industry recognized documentation of specific expertise in a business field or skill.

§127.295. Practicum in Business Management (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisites: Touch System Data Entry and Business Management or Business Communication and Technologies. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating

business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences occur in a paid or unpaid arrangement and a variety of locations appropriate to the nature and level of experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies. Students develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies and implements employability skills to gain a position in a company. The student is expected to:

(A) assess personal marketability;

(B) practice job-search strategies, including:

(i) write a letter of application;

(ii) prepare a resume;

(iii) use networking techniques to identify employment opportunities; and

(iv) complete a job application;

(C) demonstrate proper interview techniques and professional dress and appearance;

(D) interview for a job, performing proper interview techniques and modeling professional dress and appearance;

(E) practice appropriate follow-up etiquette procedures, including:

(i) write a thank you note; and

(ii) write a follow-up letter after a job interview;

(F) identify skills and attributes necessary for professional advancement;

(G) evaluate and compare employment options such as salaries, benefits, and prerequisites;

(H) identify and rank tangible and intangible rewards of work; and

(I) identify employment opportunities and complete job search procedures such as job applications and W-4.

(2) The student demonstrates professional standards as required by business and industry. The student is expected to:

(A) adhere to policies and procedures;

(B) demonstrate positive work behaviors and attitudes, including punctuality, time-management, initiative, and cooperation;

(C) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(D) complete tasks with the highest standards to ensure quality products and services.

(3) The student develops and demonstrates skills for success in the workplace. The student is expected to:

(A) explain the importance of and model appropriate dress, hygiene, and demeanor for the work assignment;

(B) exhibit productive work habits and attitudes, including accepting constructive criticism; and

(C) prioritize work to fulfill responsibilities, meet deadlines, and complete tasks with the highest standards to ensure quality products and services.

(4) The student applies principles of effective interpersonal skills. The student is expected to:

(A) demonstrate professional qualities, including positive attitude, loyalty, and diplomacy;

(B) identify and demonstrate skills needed to maintain effective work relations with relevant parties such as colleagues and customers;

(C) demonstrate a respect for different workplace cultures and individuals from different cultures, genders, and backgrounds;

(D) understand rights and responsibilities concerning sexual harassment in the workplace;

(E) apply tact in handling criticism and disagreement or disappointment, accept constructive criticism, and revise personal views when valid evidence warrants;

(F) explain the concepts of integrity and confidentiality as related to the office environment; and

(G) demonstrate methods for implementing and improving customer satisfaction.

(5) The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:

(A) analyze leadership in relation to trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation;

(B) demonstrate teamwork skills through working cooperatively with others to achieve goals;

(C) demonstrate teamwork processes that promote team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate responsibility for shared group and individual work tasks; and

(E) establish and maintain effective working relationships by:

(i) demonstrating interpersonal skills;

(ii) using positive interpersonal skills to work cooperatively with others;

(iii) negotiating effectively to arrive at decisions; and

(iv) demonstrating sensitivity to and value for diversity.

(6) The student facilitates internal and external office communications to support work activities. The student is expected to:

(A) record messages accurately, legibly, and completely;

(B) deliver messages to the appropriate person or department;

(C) coordinate arrangements for participants;

(D) follow calling and login procedures; and

(E) troubleshoot any problems.

(7) The student abides by risk-management policies and procedures for technology to minimize loss. The student is expected to:

(A) adhere to technology safety and security policies such as acceptable use policy and web page policies;

(B) apply ergonomic techniques to technology tasks;

(C) adhere to laws pertaining to computer crime, fraud, and abuse;

(D) follow procedures used to restart and recover from situations such as system failure and virus infection;

(E) follow policies to prevent loss of data integrity; and

(F) adhere to the organization's policies for technology use.

(8) The student uses information technology tools to manage and perform work responsibilities. The student is expected to:

(A) demonstrate advanced web search skills;

(B) demonstrate advanced word-processing skills by:

(i) identifying customary styles of business documents such as memoranda, letters, emails, and reports;

(ii) inputting data using the touch system;

(iii) demonstrating basic writing techniques such as correct memorandum format, informal or formal style, and direct or indirect layout;

(iv) applying correct grammar, spelling, punctuation, and other English mechanics; and

(v) using references and preparing notations;

(C) apply advanced presentation applications;

(D) demonstrate advanced spreadsheet applications by:

(i) entering labels and values into spreadsheet cells;

(ii) formatting labels and values;

(iii) preparing tables, graphs, infographics and graphics;

(iv) developing formulas and entering appropriate functions; and

(v) verifying formulas and functions with sample values;

(E) construct advanced database applications;

(F) perform scheduling functions electronically to facilitate on-time, prompt completion of work activities by:

(i) creating a calendar or schedule;

(ii) maintaining an appointment calendar;

(iii) verifying appointments;

(iv) coordinating travel arrangements;

(v) setting up meeting arrangements; and

(vi) disseminating meeting information to appropriate persons; and

(G) enter data without error.

(9) The student manages personal finances to achieve financial goals. The student is expected to:

(A) develop a budget based on personal financial goals;

(B) interpret a pay stub;

(C) read and reconcile bank statements;

(D) maintain financial records;

(E) demonstrate the wise use of credit;

(F) validate a credit history;

(G) protect against identity theft; and

(H) prepare personal income tax forms, including the 1040E.

(10) The student establishes procedures to maintain equipment and supplies. The student is expected to:

(A) determine equipment needed;

(B) determine supplies needed;

(C) establish equipment and supplies maintenance systems;

(D) schedule equipment maintenance; and

(E) use equipment and supplies maintenance procedures.

(11) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem to develop creative and innovative solutions;

(B) critically analyze information to determine value to the problem-solving task;

(C) compare and contrast alternatives using a variety of problem-solving and critical-thinking skills; and

(D) conduct technical research to gather information necessary for decision making.

§127.296. Extended Practicum in Business Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter

(relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Business, Marketing, and Finance Career Cluster. Recommended prerequisites: Touch System Data Entry and Business Management or Business Communication and Technologies. Corequisite: Practicum in Business Management. This course must be taken concurrently with Practicum in Business Management and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Extended Practicum in Business Management is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences occur in a paid or unpaid arrangement and a variety of locations appropriate to the nature and level of experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. Students apply technical skills to address business applications of emerging technologies. Students develop a foundation in the economic, financial, technological, international, social, and ethical aspects of business to become competent consumers, employees, and entrepreneurs. Students enhance reading, writing, computing, communication, and reasoning skills and apply them to the business environment. Students incorporate a broad base of knowledge that includes the legal, managerial, marketing, financial, ethical, and international dimensions of business to make appropriate business decisions.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques with increased proficiency;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations effectively;

(D) analyze, interpret, and effectively communicate information; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills independently and in groups with increased fluency to solve problems and make decisions;

(B) apply critical-thinking strategies with increased fluency to develop solutions using appropriate technologies and resources;

(C) conduct technical research to gather information necessary for decision making; and

(D) analyze elements of a problem to develop creative and innovative solutions.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) understand and consistently follow workplace safety rules and regulations;

(B) adhere to technology safety and security policies such as acceptable use policy and web page policies; and

(C) follow policies to prevent loss of data integrity.

(4) The student understands the professional, ethical, and legal responsibilities in business management. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) describe and practice ethical and legal responsibilities associated with business management;

(C) show integrity by choosing the ethical course of action when making decisions; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a business management experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised business management experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) facilitate internal and external office communications to support work activities;

(D) demonstrate appropriate use of information technology tools to manage and perform work responsibilities;

(E) create customary styles of business documents such as memoranda, letters, emails, and reports, as appropriate;

(F) perform scheduling functions electronically to facilitate on-time, prompt completion of work activities;

(G) demonstrate growth of technical skill competencies;

(H) evaluate strengths and weaknesses in technical skill proficiency; and

(I) collect representative work samples.

§127.297. Practicum in Marketing (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended Prerequisite: Principles of Business, Marketing, and Finance. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Practicum in Marketing is a series of dynamic activities that focus on the customer to generate a profitable exchange. Students will gain knowledge and skills that help them to be proficient in one or more of the marketing functional areas associated with distribution, financing, marketing information management, pricing, product planning, promotion, purchasing, risk management, and selling skills. Students will integrate skills from academic subjects, information technology, interpersonal communication, and management training to make responsible decisions. The practicum course is a paid or unpaid experience for students participating in a coherent sequence of career and technical courses in marketing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the nature of business and shows its contribution to society. The student is expected to:

(A) distinguish ways that businesses contribute to society;

(B) explain the importance of social responsibility;

(C) describe types of business activities;

(D) explain the organizational design of businesses;

(E) discuss the global environment in which businesses operate; and

(F) depict factors that affect the business environment and how businesses can respond.

(2) The student demonstrates the importance of marketing and the functions of marketing. The student is expected to:

(A) explain the marketing concept; and

(B) describe each marketing function and how it relates to the marketing concept.

(3) The student analyzes the marketing mix, which involves a combination of the decisions about product, price, place, promotion, and people. The student is expected to:

(A) explain how each component of the marketing mix contributes to successful marketing; and

(B) illustrate the importance of marketing strategies in the marketing mix.

(4) The student knows the concepts and strategies used to determine target markets and market identification. The student is expected to:

(A) explain the importance of target markets;

(B) compare and contrast advantages and disadvantages of market segmentation and mass marketing;

(C) distinguish among geographic, demographic, psychographic, and behavioral segmentation; and

(D) explain the nature of marketing planning.

(5) The student applies mathematical concepts in marketing. The student is expected to:

(A) execute calculations involving money, time, space, materials, and data;

(B) interpret charts and graphs to make informed marketing decisions;

(C) use formulas and equations to determine price, profit, costs, and break-even point;

(D) perform mathematical operations;

(E) predict reasonable estimations;

(F) create mathematical models from real-life situations; and

(G) determine rate of change mathematically.

(6) The student knows how to use self-development techniques and interpersonal skills to accomplish marketing objectives. The student is expected to:

(A) identify and practice effective interpersonal and team-building skills involving situations with coworkers, managers, and customers;

(B) develop short- and long-term personal goals;

(C) identify and use time-management principles; and

(D) participate in leadership and career development activities.

(7) The student applies information technology as an effective marketing tool. The student is expected to:

(A) identify social media trends in marketing;

(B) identify ways that technology impacts business;

(C) apply web-search skills;

(D) demonstrate word-processing skills;

(E) use database applications; and

(F) execute spreadsheet applications.

(8) The student recognizes that careers are ever changing and require continual self-assessment, research, and preparation to develop and implement responsible decisions. The student is expected to:

(A) develop a working portfolio containing components such as resume, cover letter, thank you letter, references, letter of recommendation, and work samples;

(B) analyze personal social media accounts for potential employability; and

(C) demonstrate interview skills.

(9) The student knows the importance of emerging trends and technologies in marketing. The student is expected to:

(A) discuss trends affecting marketing; and

(B) research emerging technologies in marketing.

(10) The student knows the impact and value of diversity. The student is expected to:

(A) explain how diversity affects marketing; and

(B) probe the impact of multiculturalism and multigenerationalism on marketing activities.

(11) The student knows that marketing begins with a working knowledge of economic concepts. The student is expected to:

(A) discuss characteristics of economic goods and services;

(B) identify economic needs and wants;

(C) explain the concept of utility and cite examples of types of utility;

(D) describe the function of prices in markets; and

(E) clarify how the interaction of supply and demand affects price.

(12) The student knows that a nation's economic system is determined by what is produced, how it is produced, and how it is distributed. The student is expected to:

(A) compare and contrast how economies answer basic economic questions;

(B) explain why most economies are mixed; and

(C) determine the relationship between government and business.

(13) The student knows that private enterprise is based on independent decisions by businesses and limited government involvement. The student is expected to:

(A) determine characteristics of a private enterprise system;

(B) explain the advantages and disadvantages of private enterprise; and

(C) identify examples of competitive business situations such as price or nonprice competition.

(14) The student knows that economic factors such as gross domestic product, standard of living, consumer price index, and unemployment figures help influence a company's marketing strategies. The student is expected to:

(A) identify economic measurements used to analyze an economy;

(B) research how economic measures are used in a market economy;

(C) describe the concept of price stability as an economic measure;

(D) interpret the measure of consumer spending as an economic indicator;

(E) examine the impact of a nation's unemployment rates; and

(F) describe the economic impact of inflation on business.

(15) The student knows that changes in the economy include prosperity, recession, depression, and recovery and are collectively referred to as the business cycle. The student is expected to:

(A) explain the concept of business cycles; and

(B) describe the impact that phases of a business cycle have on the economy.

(16) The student knows that distribution systems facilitate the movement of products. The student is expected to:

(A) understand channels of distribution;

(B) identify physical distribution activities; and

(C) examine costs associated with distribution.

(17) The student knows that marketers use investment and financial services to achieve goals and objectives. The student is expected to:

(A) illustrate types of financial services; and

(B) explain the purpose of a credit contract.

(18) The student knows the concept of pricing and strategies used in determining and adjusting price. The student is expected to:

(A) state goals of pricing;

(B) identify factors affecting pricing;

(C) explain how pricing affects product, place, and promotion decisions;

(D) compare and contrast pricing policies;

(E) calculate a product's price;

(F) describe the role of business ethics in pricing; and

(G) analyze legal considerations for pricing.

(19) The student understands the promotional concepts and strategies needed to communicate information about products, services, images, and ideas to achieve a desired outcome. The student is expected to:

(A) explain the communication processes as used in promotional activities;

(B) evaluate types of promotion;

(C) understand the concept of promotional mix;

(D) define the role of promotion as a marketing function;

(E) describe the use of business ethics in promotion;

(F) explore the regulation of promotion;

(G) explain the nature of direct marketing channels;

(H) model communication channels used in sales promotion; and

(I) describe communication channels used in public relations activities.

(20) The student knows that advertising is the paid form of nonpersonal communication about an identified sponsor's products. The student is expected to:

(A) illustrate types of advertising media;

(B) differentiate between product and institutional advertising; and

(C) identify and evaluate elements of an advertisement.

(21) The student knows that business risk is the possibility of loss or failure. The student is expected to:

(A) categorize business risks; and

(B) interpret how various types of risks impact business activities.

(22) The student knows that marketers responsible for risk management follow a process to decide the best strategy to deal with each risk. The student is expected to:

(A) evaluate security precautions; and

(B) demonstrate knowledge of safety precautions in the workplace.

(23) The student knows what influences customers before they make a purchase. The student is expected to:

(A) differentiate among a feature and a benefit;

(B) compare and contrast between consumer and organizational buying behavior;

(C) determine customer needs and wants;

(D) classify buying motives; and

(E) analyze how customers and organizations apply the decision-making process.

(24) The student knows how marketers use the selling process. The student is expected to:

(A) locate product information; and

(B) illustrate the sale process.

(25) The student understands the techniques and strategies used to foster positive, ongoing relationships with customers to enhance company image. The student is expected to:

(A) explain the nature of positive customer relations;

(B) describe a customer service mindset;

(C) explain the management role in customer relations;

(D) identify a company brand promise;

(E) explore ways of reinforcing company image through employee performance; and

(F) describe the use of technology in customer relationship management.

(26) The student understands a business's responsibility to know and abide by workplace laws, trade regulations, and ethical behavior that affect business operations. The student is expected to:

(A) apply ethics to demonstrate trustworthiness;

(B) explain the nature of business ethics;

(C) describe legal issues affecting businesses;

(D) defend the nature of human resources regulations;

(E) explain the nature of workplace regulations such as Occupational Safety and Health Administration and statutes such as the Americans with Disabilities Act;

(F) discuss employment relationships;

(G) illustrate the nature of trade regulations; and

(H) describe the impact of antitrust legislation.

(27) The student applies ethical reasoning to a variety of workplace situations in order to make ethical decisions. The student is expected to:

(A) evaluate alternative responses to workplace situations based on personal or professional ethical responsibilities;

(B) identify personal and long-term workplace consequences of unethical or illegal behaviors;

(C) investigate the most appropriate response to workplace situations based on legal and ethical considerations; and

(D) demonstrate responsible behavior, honesty, integrity, and ethical work habits.

(28) The student completes required training, education, and certification to prepare for employment in a particular career field. The student is expected to:

(A) identify training, education, and certification requirements for occupational choice; and

(B) participate in career-related training or degree programs.

(29) The student knows the elements and processes of product planning. The student is expected to:

(A) explain the nature and scope of product planning;

(B) relate product-mix strategies to meet customer expectations; and

(C) define the product life cycle.

§127.298. Extended Practicum in Marketing (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course and is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Business, Mar-

keting, and Finance Career Cluster. Recommended prerequisite: Principles of Business, Marketing, and Finance. Corequisite: Practicum in Marketing. This course must be taken concurrently with Practicum in Marketing and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Business, Marketing, and Finance Career Cluster focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing.

(3) Extended Practicum in Marketing is a series of dynamic activities that focus on the customer to generate a profitable exchange. Students will gain knowledge and skills that help them to be proficient in one or more of the marketing functional areas associated with distribution, financing, marketing information management, pricing, product planning, promotion, purchasing, risk management, and selling skills. Students will integrate skills from academic subjects, information technology, interpersonal communication, and management training to make responsible decisions.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques with increased proficiency;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations effectively;

(D) analyze, interpret, and effectively communicate information; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) conduct technical research to gather information necessary for decision making; and

(C) analyze elements of a problem to develop creative and innovative solutions.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and

(B) adhere to technology safety and security policies such as acceptable use policy and webpage policies.

(4) The student understands the professional, ethical, and legal responsibilities in marketing. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply alternative responses to workplace situations based on personal or professional ethical responsibilities;

(C) show integrity by choosing the ethical course of action when making decisions; and

(D) comply with all applicable rules, laws, and regulations such as Occupational Safety and Health Administration and statutes such as the Americans with Disabilities Act in a consistent manner.

(5) The student participates in a marketing experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised marketing experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate use of information technology tools to manage and perform work responsibilities;

(D) apply concepts and strategies needed to communicate information about products, services, images, and ideas to achieve a desired outcome;

(E) model communication channels used in sales promotion;

(F) apply different components of the marketing mix to contribute to successful marketing;

(G) apply the elements and processes of product planning, including related product-mix strategies to meet customer expectations;

(H) identify and evaluate elements of an advertisement with increased fluency;

(I) demonstrate growth of technical skill competencies;

(J) evaluate strengths and weaknesses in technical skill proficiency; and

(K) collect representative work samples.

§127.299. Practicum in Entrepreneurship (Two Credits), Adopted 2023.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisites: En-

trepreneurship I and Entrepreneurship II or successful completion of at least two courses in a career and technical education (CTE) program of study. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) This course can serve in multiple CTE programs of study, as it focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing related to the student's industry focus.

(3) Practicum in Entrepreneurship provides students the opportunity to apply classroom learning and experiences to real-world business problems and opportunities in a free enterprise system while expanding their skill sets and professional relationships as a real or simulated business owner versus the experience one would have as an employee. Students will prepare for an entrepreneurial career in their area of interest in their career cluster and build on and apply the knowledge and skills gained from courses taken in an array of career areas. Practicum experiences occur in a paid or an unpaid arrangement and a variety of locations appropriate to the nature and level of the student's need for work-based learning experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. It is recommended that students are paired with local business owners or employers in their specific industry program of study.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, local chamber of commerce meetings, and meetings with entrepreneurs, mentors, or industry experts.

(5) Students are encouraged to transition from the idea phase to action and implementation of a business, including validation through sales in a real or simulated scenario.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes major problem areas and potential problem areas for entrepreneurs while demonstrating an understanding of leverage points and constraints. The student is expected to:

(A) assess businesses that have failed, determine factors associated with business closure, and prepare and present analysis to peers;

(B) research and analyze risks faced by entrepreneurs;

(C) evaluate entrepreneurial risk versus opportunity for a given business example;

(D) describe how entrepreneurship differs from working for an employer;

(E) analyze personal aptitude for entrepreneurship;

(F) describe how entrepreneurs must manage organizational finances;

(G) research and apply the entrepreneur's approach to risk-taking as it applies to business decision-making;

(H) explore and explain a company's competitive advantage in its field of interest;

(I) analyze the risks and rewards of business ownership by interviewing an entrepreneur in a chosen field of interest; and

(J) analyze how psychology and sociology explain factors that drive customer behavior and impact business success.

(2) The student identifies the appropriate legal structure, benefits, and drawbacks for different business types. The student is expected to:

(A) describe the different basic types of business formation, including sole proprietorship, partnership, corporation, and limited liability company;

(B) compare the benefits and drawbacks for each type of business structure such as personal liability and taxes; and

(C) research an existing business and simulate liability issues associated with its type of business structure through role-play.

(3) The student determines how to obtain funding and all associated costs needed to start a particular business. The student is expected to:

(A) describe all materials, facilities, technology, inventory, and personnel that will be needed to start and sustain the business;

(B) devise a timeline of tasks that must be completed, including the associated costs;

(C) list and describe all supplies, personnel wages and salaries, inventories, insurance, utilities, repair and maintenance, and other operating costs associated with funding the business once it is operating;

(D) document and analyze the costs associated with operating the business, using cash flow and return on investment as a means of evaluation;

(E) estimate how much money will be needed on-hand to operate the business until the break-even point;

(F) seek the advice of mentors from industry to analyze and discuss actual business situations and funding options to assist the student with a business idea;

(G) create and analyze financial statements to identify ways to improve business performance in a business model of choice; and

(H) define cash burn in relationship to a business's viability.

(4) The student examines the responsibilities businesses have to employees and the community. The student is expected to:

(A) explain the benefits of a business that contributes to the economic well-being of its employees and community;

(B) research and describe the methods in which a business can ensure economic growth and provide jobs;

(C) explore and analyze the health and safety responsibilities a business has to the community and its employees; and

(D) research and identify how businesses are making investments in community infrastructure.

(5) The student analyzes for-profit and non-profit business growth and exit strategies. The student is expected to:

(A) compare business growth strategies and identify and defend the most favorable for a potential business;

(B) describe methods that a business owner can use to obtain financial support to expand a business;

(C) identify and explain various methods an entrepreneur can use to determine how much a business is worth;

(D) analyze various paths to exit a business and the impact from startup decisions; and

(E) explain the factors an entrepreneur should consider when preparing to exit a business.

(6) The student collaborates in small groups to complete a project-based research activity to develop critical thinking and creative problem solving. The student is expected to:

(A) analyze a real-world work site and research an existing issue or problem the business is experiencing;

(B) research and report how to resolve the business problem;

(C) develop a proposal for future business opportunities; and

(D) determine how to create business relationships or alliances that would be beneficial to the business.

§127.300. Extended Practicum in Entrepreneurship (One Credit), Adopted 2023.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or an unpaid capstone experience for students participating in a coherent sequence of career and technical education (CTE) courses in the Business, Marketing, and Finance Career Cluster. Recommended prerequisites: Entrepreneurship I and Entrepreneurship II or successful completion of at least two courses in a CTE program of study. Corequisite: Practicum in Entrepreneurship. This course must be taken concurrently with Practicum in Entrepreneurship and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) This course can serve in multiple CTE programs of study, as it focuses on planning, managing, organizing, directing, and evaluating business functions essential to efficient and productive business management, finance, operations, and marketing related to the student's industry focus.

(3) Extended Practicum in Entrepreneurship provides students the opportunity to apply classroom learning and experiences to real-world business problems and opportunities in a free enterprise system while expanding their skill sets and professional relationships as a real or simulated business owner versus the experience one would have as an employee. Students will prepare for an entrepreneurial career in their area of interest in their career cluster and build on and apply the knowledge and skills gained from courses taken in an array of career areas. Practicum experiences occur in a paid or an unpaid arrangement and a variety of locations appropriate to the nature and level of the student's need for work-based learning experience. Students implement personal and interpersonal skills to strengthen individual performance in the workplace and in society and to make a successful transition to the workforce or postsecondary education. It is recommended that students are paired with local business owners or employers in their specific industry program of study.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, local chamber of commerce meetings, and meetings with entrepreneurs, mentors, or industry experts.

(5) Students are encouraged to transition from the idea phase to action and implementation of a business, including validation through sales in a real or simulated scenario.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques with increased proficiency;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations effectively;

(D) analyze, interpret, and effectively communicate information; and

(E) exhibit positive customer/client communication skills to maintain effective internal and external business relationships.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) conduct technical research to gather information necessary for decision making; and

(C) analyze elements of a problem to develop creative and innovative solutions.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate understanding of and consistently follow workplace safety rules and regulations; and

(B) adhere to technology safety and cybersecurity policies such as acceptable use policy and webpage policies.

(4) The student understands the ethical and legal responsibilities in entrepreneurship. The student is expected to:

(A) apply appropriate responses to workplace situations based on personal or professional ethical responsibilities;

(B) demonstrate integrity by choosing the ethical course of action when making decisions; and

(C) comply with all applicable rules, laws, and regulations for the selected industry.

(5) The student participates in an entrepreneurial experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate use of information technology tools to manage and perform work responsibilities;

(D) create customary styles of documents such as memoranda, letters, emails, and reports, as appropriate, to an industry of choice;

(E) apply the elements and processes of entrepreneurship to grow a business idea and meet customer expectations;

(F) demonstrate growth of technical skill competencies;

(G) evaluate strengths and weaknesses in technical skill proficiency; and

(H) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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SUBCHAPTER G. EDUCATION AND TRAINING

19 TAC §§127.309 - 127.315, 127.343 - 127.346

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.309. Principles of Education and Training (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Principles of Education and Training is designed to introduce learners to the various careers within the Education and Training Career Cluster. Students use self-knowledge as well as educational and career information to analyze various careers within the Education and Training Career Cluster. Students are introduced to societal influences of education and various school models. Additionally, students learn the role and responsibilities of a classroom educator. Students will develop a graduation plan that leads to a specific career choice in the student's interest area.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies strategies that promote health and wellness to address the unique challenges of educators in balancing work and personal responsibilities. The student is expected to:

(A) explain common signs of stress and anxiety;

(B) describe appropriate boundaries for a healthy work-life balance;

(C) discuss the impacts of an education career on personal lifestyle such as impacts on time, earning potential, community presence and involvement, health and wellness, and family;

(D) describe appropriate boundaries for a healthy work-life balance; and

(E) discuss strategies to manage health and wellness.

(2) The student recognizes the impact of social media and web-based applications on the education process. The student is expected to:

(A) demonstrate appropriate use of social media for educational purposes; and

(B) identify web-based resources that can be used in the education process.

(3) The student investigates the range of employment opportunities in the education and training field. The student is expected to:

(A) identify and investigate career opportunities in education and training;

(B) investigate additional occupations in education and training such as professional support services, administration, county extension agent, and corporate trainer;

(C) compare transferable skills among a variety of careers in education and; and

(D) analyze results from personal assessments such as how results from career interest and ability inventories relate to skills necessary for success in education and training occupations.

(4) The student explains societal impacts on the education and training field. The student is expected to:

(A) investigate trends or issues that have influenced the development of education across the United States such as historical, societal, cultural, and political trends and issues;

(B) explain pedagogy and andragogy theory;

(C) predict the education and training job market using information from sources such as labor market information, technology, and societal or economic trends; and

(D) summarize the role of family/caregiver in education.

(5) The student describes the characteristics of different educational and training environments. The student is expected to:

(A) summarize the various roles and responsibilities of professionals in teaching and training and early learning, including demonstrating ethical behavior in educational settings;

(B) describe different types of schools in urban and rural areas and public and private schools such as academies, Montessori, charter, and magnet schools;

(C) compare teacher salary schedules among different school models such as public, private, and charter schools within rural and urban areas of the state;

(D) discuss factors, including stipends, state and school district initiatives, and level of education, that can impact earning potential; and

(E) identify various sources for information related to education careers such as requirements to become a teacher, curriculum standards, and the structures and roles of state and federal governing bodies in education.

(6) The student experiences authentic education and training opportunities. The student is expected to:

(A) observe educator duties and responsibilities through activities such as assisting, shadowing, or observing;

(B) develop and evaluate instructional materials such as visuals, teacher aids, manipulatives, lessons, and lesson plans;

(C) define lesson plan components, including objectives, direct instruction, guided practice, independent practice, and formative and summative assessments;

(D) identify and discuss methods to adapt lessons to meet student needs; and

(E) identify a personal set of beliefs related to education in preparation for developing a philosophy of education.

(7) The student identifies elements of an effective classroom environment. The student is expected to:

(A) use available classroom equipment and technology for effective instruction;

(B) analyze effective tools used in classroom management such as classroom expectations, seating charts, classroom set-up, procedures and routines, and teacher organization and preparation;

(C) explain characteristics of an effective learning environment, including universally accessible classroom design;

(D) analyze positive behavior intervention techniques, including restorative practices; and

(E) develop a differentiated lesson plan that includes scaffolding for all levels of learners.

(8) The student analyzes the education and training requirements for a career in an area of interest. The student is expected to:

(A) investigate degree plans or training alternatives for various occupations within teaching and training and early learning;

(B) develop a graduation plan that leads to a specific career choice in the area of interest;

(C) investigate and identify high school and dual enrollment opportunities related to education and training careers;

(D) investigate and identify scholarships, grants, and financial incentives related to interest areas in education and training;

(E) identify and compare technical and community college programs that align with interest areas in education and training; and

(F) identify and compare university programs and institutions that align with interest areas in education and training.

(9) The student documents technical knowledge and skills related to education and training. The student is expected to:

(A) assemble basic professional portfolio components such as basic resume, samples of work, service-learning logs, assessment results, and mock scholarship applications; and

(B) present a portfolio to interested stakeholders such as teachers, school administrators, career and technical education administrators, curriculum specialists, or human resources personnel.

(10) The student understands how classroom observations (video or in person) inform and improve instruction. The student is expected to:

(A) apply knowledge gained in the course to conduct targeted observations;

(B) record objective observations of student behavior and teacher interactions;

(C) explain how observations can influence philosophy of education and delivery of instruction; and

(D) identify qualities of an effective classroom through classroom observation.

§127.310. Human Growth and Development (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Education and Training or Principles of Human Services. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Human Growth and Development is an examination of human development across the lifespan with emphasis on research, theoretical perspectives, and common physical, cognitive, emotional, and social developmental milestones. Students use the knowledge and skills gained in this course to prepare for a career path working with children in an educational or service learning setting. The course covers material that is generally taught in a postsecondary, one-semester introductory course in developmental psychology or human development.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands historical, theoretical, and research perspectives of human growth and development throughout the lifespan. The student is expected to:

(A) explain the role of theories in understanding human development;

(B) describe theoretical perspectives regarding influences on human development throughout the lifespan;

(C) summarize how historical theories influence modern theories of human development;

(D) compare research methods commonly used to study human development; and

(E) compare pedagogy and andragogy.

(2) The student understands the importance of prenatal care in the development of a child. The student is expected to:

(A) describe nutritional needs prior to and during pregnancy;

(B) explain reasons for medical care and good health practices prior to and during pregnancy;

(C) outline stages of prenatal development;

(D) discuss the role of genetics in prenatal development; and

(E) identify environmental factors affecting development of the fetus.

(3) The student understands the development of children ages newborn through two years. The student is expected to:

(A) analyze the physical, emotional, social, and cognitive development of infants and toddlers;

(B) analyze various developmental theories relating to infants and toddlers;

(C) investigate the influences of the family and society on the infant and toddler;

(D) summarize strategies for optimizing the development of infants and toddlers, including those with special needs;

(E) determine techniques that promote the health and safety of infants and toddlers; and

(F) determine developmentally appropriate guidance techniques for children in the first two years of life.

(4) The student understands the development of children ages 3 through 5 years. The student is expected to:

(A) analyze the physical, emotional, social, and cognitive development of preschoolers;

(B) analyze various developmental theories relating to preschoolers;

(C) investigate the influences of the family and society on preschoolers;

(D) summarize strategies for optimizing the development of preschoolers, including those with special needs;

(E) determine techniques that promote the health and safety of preschoolers; and

(F) compare and suggest developmentally appropriate guidance techniques for preschoolers.

(5) The student understands the development of children ages 6 through 11 years. The student is expected to:

(A) analyze the physical, emotional, social, and cognitive development of children in the early to middle childhood stage of development;

(B) analyze various developmental theories relating to children in the early to middle childhood stage of development;

(C) investigate the influences of the family and society on children in the early to middle childhood stage of development;

(D) summarize strategies for optimizing the development of children in the early to middle childhood stage of development, including those with special needs;

(E) determine techniques that promote the health and safety of children in the early to middle childhood stage of development; and

(F) compare and suggest developmentally appropriate guidance techniques for children in the early to middle childhood stage of development.

(6) The student understands the development of adolescents ages 12 through 19 years. The student is expected to:

(A) analyze the biological and cognitive development of adolescents;

(B) analyze the emotional and social development of adolescents;

(C) discuss various theoretical perspectives relevant to adolescent growth and development;

(D) investigate the influences of the family and society on adolescents;

(E) summarize strategies for optimizing the development of adolescents, including those with special needs;

(F) determine techniques that promote the health and safety of adolescents; and

(G) compare and suggest developmentally appropriate guidance techniques for adolescents.

(7) The student understands the importance of care and protection of children and adolescents. The student is expected to:

(A) determine services provided by agencies that protect the rights of children and adolescents;

(B) summarize various resources focusing on the care and protection of children and adolescents;

(C) discuss the impact of changing demographics and cultural diversity on the health and welfare of children and adolescents;

(D) analyze forms, causes, effects, prevention, and treatment of child abuse;

(E) explain the impact of appropriate health care and importance of safety for children and adolescents; and

(F) discuss responsibilities of community members, legislation, and public policies related to care and protection of children and adolescents.

(8) The student understands the development of adults ages 20 through 39 years. The student is expected to:

(A) analyze various development theories relating to early adults, including biological and cognitive development;

(B) analyze various development theories relating to early adults, including emotional, moral, and psychosocial development;

(C) investigate the influences of society and culture on early adults; and

(D) discuss the importance of family, human relationships, and social interaction for early adults.

(9) The student understands the development of adults ages 40 through 65 years. The student is expected to:

(A) analyze various development theories relating to middle adults, including biological and cognitive development;

(B) analyze various development theories relating to middle adults, including emotional, moral, and psychosocial development;

(C) investigate the influences of society and culture on middle adults; and

(D) discuss the importance of family, human relationships, and social interaction for middle adults.

(10) The student understands the development of adults ages 66 years and older. The student is expected to:

(A) analyze various development theories relating to those within the stage of late adulthood, including biological and cognitive development;

(B) analyze various development theories relating to those within the stage of late adulthood, including emotional, moral, and psychosocial development;

(C) investigate the influences of society and culture on those within the stage of late adulthood; and

(D) discuss the importance of family, human relationships, and social interaction for those within the stage of late adulthood.

(11) The student explores career opportunities available in education and training and human services. The student is expected to:

(A) assess personal interests, aptitudes, and abilities as related to the various occupations within education and training and human services;

(B) evaluate employment and entrepreneurial opportunities, including education requirements in a field of interest; and

(C) identify effective methods for securing part-time or entry-level employment in positions that prepare students for careers in education and training or human services.

§127.311. Child Development (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services or Principles of Education and Training. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Child Development is a course that addresses knowledge and skills related to child growth and development from prenatal through school-age children. Students use these skills to promote the well-being and healthy development of children and investigate careers related to the care and education of children.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes roles and responsibilities of caregivers or guardians. The student is expected to:

(A) compare parenting styles and the potential influence of each style on a child's development;

(B) investigate the legal rights and responsibilities of parents;

(C) analyze positive relationship characteristics and developmentally appropriate communication skills needed for parenting; and

(D) analyze the parental responsibilities of educating children through the continuum of developmental stages.

(2) The student examines the care, protection, and safety of children. The student is expected to:

(A) analyze the effects of childhood trauma at each developmental stage;

(B) describe the counseling and therapeutic services available to children such as pharmacotherapy and cognitive-behavioral, family, trauma-focused, and play therapy;

(C) demonstrate first aid and cardiopulmonary resuscitation skills;

(D) analyze community resources relevant to the care and protection of children, including childcare services, health care services, and auxiliary service organizations;

(E) examine suggested preventative health care recommendations for children such as American Academy of Pediatrics (AAP) and Centers for Disease Control and Prevention (CDC) guidelines and recommendations for immunizations, physical exams, and oral hygiene;

(F) assess the safety of children's cribs, toys, clothing, food, and travel safety equipment; and

(G) identify current legislation and public policies affecting the care, protection, and safety of children.

(3) The student investigates components of optimal prenatal care and development. The student is expected to:

(A) identify signs and stages of pregnancy;

(B) analyze the effect of environmental and hereditary factors on conception and fetal development, including prenatal brain development;

(C) identify characteristics of, contributing factors to, and treatment of various fetal birth defects, including defects of unknown ideology;

(D) analyze nutritional needs prior to and during pregnancy;

(E) analyze appropriate medical care and good health practices prior to and during pregnancy;

(F) explain how technological advances in prenatal care can impact child development;

(G) explore careers that provide service to those receiving prenatal care; and

(H) analyze the process of labor and delivery methods.

(4) The student investigates strategies for optimizing the development of children ages birth through 12 months, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, intellectual, and moral developmental needs of children ages birth through twelve months;

(B) investigate the impact of children ages birth through twelve months on the family such as the impact on roles, finances, responsibilities, and relationships in the family;

(C) analyze the impact of technology such as personal usage or exposure and assistive technologies on the growth and development of children ages birth through 12 months;

(D) explore careers that provide service to children ages birth through twelve months; and

(E) identify appropriate nutrition and ways to meet nutritional needs, including breast feeding and formula feeding, and considerations related to food allergies for children ages birth through twelve months.

(5) The student investigates strategies for optimizing the development of children ages 13 months through 35 months, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, intellectual, and moral developmental needs of children ages 13 months through 35 months;

(B) create play activities such as pre-literacy, social emotional learning, mathematics, science, physical movement, outdoor play, art, and music activities that enhance the growth and development of children ages 13 months through 35 months;

(C) analyze the impact of technology such as personal usage and assistive technologies on the growth and development of children ages 13 months through 35 months;

(D) analyze appropriate nutritional guidelines that promote wellness in children ages 13 months through 35 months;

(E) explore careers that provide service to children ages 13 months through 35 months; and

(F) prepare or plan developmentally appropriate snacks or meals that meet appropriate nutritional guidelines for children ages 13 months through 35 months.

(6) The student analyzes the growth and development of children ages 3 through 5 years, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, intellectual, and moral development needs of the children ages 3 through 5 years;

(B) describe the role of play in the development of children ages 3 through 5 years;

(C) develop activities such as physical exercise or group play activities that meet developmental needs of children ages 3 through 5 years;

(D) prepare or plan developmentally appropriate snacks or meals that meet appropriate nutritional guidelines for children ages 3 through 5 years;

(E) identify minimum standards for licensing regulations of various preschools and childcare settings such as in-home, private, public, and religious organizations;

(F) explore careers that provide service to children ages 3 through 5 years; and

(G) analyze the impact of technology on the growth and development of children ages 3 through 5 years such as personal usage, assistive technologies, and digital citizenship.

(7) The student analyzes the growth and development of children ages 6 through 11 years, including those with special needs. The student is expected to:

(A) analyze the physical, emotional, social, intellectual, and moral development needs of children ages 6 through 11 years;

(B) compare the roles of various school environments such as public, private, and home settings in the growth and development of children ages 6 through 11 years;

(C) evaluate the importance of and influences on individual and group identity such as self-concept theories, learning styles, group dynamics, cultural influences, and societal norms in relation to the growth and development of children ages 6 through 11 years;

(D) develop appropriate activities for meeting developmental needs of children ages 6 through 11 years such as physical exercise, language development, communication, listening skills, independence, conflict resolution, and self-discipline;

(E) create balanced meal plans that are developmentally appropriate for children ages 6 through 11 years, including children with special dietary needs such as food allergies and type I diabetes;

(F) explore careers that provide service to children ages 6 through 11 years;

(G) discuss legislation and public policies affecting children ages 6 through 11 years; and

(H) analyze the impact of technology on the growth and development of children ages 6 through 11 years such as personal usage, assistive technologies, and digital citizenship.

(8) The student analyzes the growth and development of children ages 12 through 19 years, including those with special needs. The student is expected to:

(A) summarize the physical, emotional, social, intellectual, and moral needs of children ages 12 through 19 years;

(B) assess the role of the various school environments such as public, private, and home environments on the growth and development of children ages 12 through 19 years;

(C) evaluate the importance of and influences on individual and group identity such as self-concept theories, group dynamics, cultural influences, and societal norms in relation to the growth and development of children ages 12 through 19 years;

(D) develop appropriate activities for meeting developmental needs of children ages 12 through 19 years such as physical, academic, professional, and social skills;

(E) create recipes for nutritious snacks or meals appropriate for preparation by children ages 12 through 19 years, including snacks or meals for individuals with special dietary needs such as food allergies or type I diabetes;

(F) explore careers that provide service to children ages 12 through 19 years;

(G) discuss legislation, child labor laws, and public policies affecting children ages 12 through 19 years;

(H) analyze the impact of technology such as personal usage, assistive technologies, digital citizenship, digital footprints, and social media on the growth and development of children ages 12 through 19 years; and

(I) propose short- and long-term career goals in child development.

§127.312. Child Guidance (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Child Development or Child Development Associate Foundations. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Child Guidance is a course that addresses the knowledge and skills related to child growth and guidance, equipping students to develop positive relationships with children and effective caregiver skills. Students use these skills to promote the well-being and healthy development of children, strengthen a culturally diverse society, and pursue careers related to the care, guidance, and education of children, including those with special needs. Instruction may be delivered through school-based laboratory training or through work-based delivery arrangements such as cooperative education, mentoring, and job shadowing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student practices ethical and legal responsibilities associated with providing childcare services. The student is expected to:

(A) apply ethical codes of conduct in a childcare setting;

(B) create coherent written communication between parents and childcare staff;

(C) identify regulatory and compliance guidelines for maintaining documentation in childcare settings, including educational, personnel, and public records;

(D) advocate through appropriate means for children when necessary;

(E) comply with laws and regulations related to childcare services;

(F) determine potential uses and management of technology, media, and resources to foster healthy child development; and

(G) employ safeguards to prevent misuse and abuse of technology and media with children.

(2) The student analyzes childcare options for children of various ages. The student is expected to:

(A) compare the financial considerations of childcare options;

(B) examine criteria for selecting quality childcare; and

(C) review minimum standards for licensing and regulations for center-based and home-based programs.

(3) The student analyzes responsibilities that promote health and wellness of children. The student is expected to:

(A) monitor student behavior for signs of physical illness and emotional disturbances in children;

(B) practice child guidance techniques that contribute to the health and wellness of children such as adequate rest, exercise, safety, and sanitation;

(C) apply procedures for creating safe environments for children; and

(D) create a meal plan for children, including nutritious snacks, following appropriate food guidelines.

(4) The student analyzes the effect of play in the development of children. The student is expected to:

(A) create examples of play that promote the physical, intellectual, emotional, and social development of children; and

(B) implement strategies to encourage socially appropriate constructive and creative play, including indoor and outdoor activities.

(5) The student applies appropriate guidance techniques for children of various ages and developmental levels, including those with special needs. The student is expected to:

(A) discuss the various types of guidance and their effects on children;

(B) determine and apply appropriate guidance techniques; and

(C) distinguish between guidance techniques and behavior that could be considered inappropriate, harmful, or abusive.

(6) The student will implement appropriate strategies and practices for optimizing the development of children ages birth through twelve months, including those with special needs. The student is expected to:

(A) create and implement activities for the development of sensory skills;

(B) create and implement activities for the development of language skills;

(C) create and implement activities for the development of physical and motor skills; and

(D) create and implement activities for the development of social skills.

(7) The student will implement appropriate strategies and practices for optimizing the development of children ages 13 months through 35 months, including those with special needs. The student is expected to:

(A) create and implement lesson plans for the development of physical skills;

(B) create and implement lesson plans for the development of vocabulary and language skills;

(C) create and implement lesson plans for the development of appropriate mathematics skills;

(D) create and implement lesson plans for the development of appropriate science skills; and

(E) create and implement lesson plans for the development of social and emotional skills.

(8) The student will implement appropriate strategies and practices for optimizing the development of children ages 3 through 5 years, including those with special needs. The student is expected to:

(A) create and implement lesson plans for the development of physical skills;

(B) create and implement lesson plans for the development of appropriate reading and language skills;

(C) create and implement lesson plans for the development of appropriate mathematics and problem-solving skills;

(D) create and implement lesson plans for the development of appropriate science skills; and

(E) create and implement lesson plans for the development of social and emotional skills.

(9) The student makes informed career decisions that reflect personal, family, and career goals. The student is expected to:

(A) analyze the impact of career decisions on personal and family goals;

(B) assess personal interests, aptitudes, and abilities needed in the childcare profession;

(C) develop short- and long-term career goals;

(D) evaluate employment and entrepreneurial opportunities; and

(E) evaluate educational requirements for early childhood development and services.

§127.313. Child Development Associate Foundations (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Education and Training or Principles of Human Services. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) The Child Development Associate Foundations course is a laboratory course addressing the knowledge and skills related to applying Child Development Associate Competency Standards in early childhood environments and understanding how these competencies help young children move with success from one developmental stage to the next.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the need for establishing a safe, healthy learning environment for young children. The student is expected to:

(A) describe a safe physical setting for an indoor classroom environment;

(B) describe a safe physical setting for an outdoor play environment;

(C) compare and contrast the learning environments for childcare settings such as preschool, infant-toddler, family childcare, and home visitor environments;

(D) identify practices that promote health and prevent illness in an early childhood classroom; and

(E) identify components of a learning environment that promotes engagement, play, exploration, and learning of all children, including children with special needs.

(2) The student recognizes the importance of advancing each child's physical and intellectual competence in the early childhood classroom through a variety of developmentally appropriate equipment, learning experiences, and teaching strategies. The student is expected to:

(A) analyze the methods for promoting physical development in young children;

(B) investigate strategies for promoting cognitive development in young children;

(C) investigate techniques for promoting language and early literacy in young children, including dual-language learners; and

(D) investigate and explain reasons for promoting creative expression and creative abilities in young children.

(3) The student analyzes social and emotional development in young children. The student is expected to:

(A) summarize the value of developing a warm, positive, supportive, and responsive relationship with each child;

(B) explain the value of helping each child learn about and take pride in the child's individual and cultural identity;

(C) research and explain the significance of helping each child function effectively in a group setting, express feelings, and acquire social skills; and

(D) identify and discuss adverse childhood experiences and their potential impact.

(4) The student discusses the need for providing positive guidance in an early childhood classroom. The student is expected to:

(A) summarize the importance of a classroom management plan;

(B) explain the importance of positively addressing challenging behaviors; and

(C) compare various positive guidance techniques.

(5) The student describes the benefits of objective observations and assessments of young children in the early childhood classroom. The student is expected to:

(A) investigate and compare various observation tools and strategies;

(B) analyze how observations impact curriculum planning and individualized teaching; and

(C) describe how objective observations are used to build productive relationships with families.

(6) The student examines the importance of positive and productive relationships with families of young children. The student is expected to:

(A) investigate and describe different family structures;

(B) describe ways to establish partnerships with families; and

(C) describe methods for effectively communicating with families.

(7) The student analyzes the components of operating an effective, professional early childhood program. The student is expected to:

(A) discuss the importance of establishing and maintaining professional relationships within an early childhood program;

(B) research various techniques for navigating disagreements or conflicts between personnel of an early childhood program;

(C) investigate the qualities of teaching with intentionality; and

(D) explain the importance of advocating for early childhood education.

(8) The student documents technical knowledge and skills. The student is expected to:

(A) assemble professional portfolio components such as a resume, samples of learning experiences, service-learning log, and assessment results; and

(B) present the portfolio to interested stakeholders such as industry professionals, parents, community members, campus teachers and administrators, and peers.

§127.314. Communication and Technology in Education (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Education and Training. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Communication and Technology in Education is an extended course of study designed to provide students with the fundamentals of planning, managing, and training services needed to provide learning support services in Kindergarten-Grade 12 classrooms. Students will develop knowledge and skills regarding the professional, ethical, and legal responsibilities in teaching related to educational technology; students will also understand laws and pedagogical justifications regarding classroom technology use. Students will develop knowledge of developmentally appropriate practice for age level when technology is used by learners. This course provides an opportunity for students to participate in training related to standards set by the International Society for Technology in Education.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the professional, ethical, and legal responsibilities when communicating in the educational field. The student is expected to:

(A) apply communication standards that promote professional, ethical, and legal conduct;

(B) identify times when communication between school and parents/community is necessary;

(C) distinguish between appropriate and inappropriate uses of social media and other communication platforms and methods; and

(D) cite sanctions and consequences for educator misconduct such as those stemming from inappropriate relationships.

(2) The student understands multiple forms of communication necessary for effective teaching. The student is expected to:

(A) demonstrate effective verbal communication skills with various stakeholders such as students, educators, parents/guardians, community members, and other professionals;

(B) demonstrate active listening skills to obtain and clarify information;

(C) identify various forms of digital communication for educators such as email, blogs, wikis, podcasts, vlogs, digital streaming, infographics, digital portfolios, or social media;

(D) construct effective and professional electronic communication with parents and stakeholders such as newsletters, emails, and websites;

(E) demonstrate effective professional collaboration and communication such as participation in professional learning communities, peer-coaching, and mentoring;

(F) demonstrate effective student-teacher communication such as assignment feedback and one-on-one interaction;

(G) facilitate effective student group work and multiple strategies for student engagement; and

(H) differentiate between approaches to communication based on student needs, including considerations for special populations and nonverbal communication.

(3) The student applies digital literacy concepts to communication with students and stakeholders. The student is expected to:

(A) apply digital literacy practices in communications to students and stakeholders such as desktop publishing, elements of art and design, and design thinking;

(B) demonstrate appropriate search strategies for finding resources on the internet such as Boolean searches;

(C) compare various digital media technologies such as digital books, databases, websites, interactive games, and digital videos; and

(D) evaluate and select appropriate software for specific purposes such as communication and research.

(4) The student evaluates technology and applications for classroom use. The student is expected to:

(A) demonstrate understanding of laws regarding classroom technology use such as Family Educational Rights and Privacy Act (FERPA), Children's Online Privacy Protection Act (COPPA), end-user license agreements (EULAs), and age restrictions;

(B) apply laws related to the legal use of electronic materials such as copyright, fair use, public domain, and open source;

(C) evaluate usage of classroom technology using a model such as substitution augmentation modification redefinition (SAMR) and technological pedagogical content knowledge (TPaCK);

(D) describe methods for approval of technology use in the district such as inventorying, licensing, and budgeting; and

(E) identify classroom management strategies appropriate for technology use in the classroom.

(5) The student creates engaging lessons and lesson plans incorporating technology. The student is expected to:

(A) analyze the relationship between technology and student engagement in the classroom;

(B) design learning experiences that incorporate 21st century learning skills such as creativity, collaboration, critical thinking, communication, and resiliency;

(C) create lessons using different types of technology such as presentation software, spreadsheet software, image editing software, video creation software, polling software, and word processing software;

(D) apply technology to assess student learning at the beginning of, during, and at the end of a lesson;

(E) design authentic learning experiences that align with content-area Texas Essential Knowledge and Skills and use technology to maximize active, deep learning across grade levels to show appropriate use based on age;

(F) create an interactive lesson that utilizes appropriate technology; and

(G) create a differentiated lesson that incorporates the appropriate use of technology.

§127.315. Instructional Practices (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: At least one credit in a course from the education and training career cluster. Recommended prerequisites: Principles of Education and Training, Human Growth and Development, or Child Development. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Instructional Practices is a field-based (practicum) course that provides students with background knowledge of child and adolescent development as well as principles of effective teaching and training practices. Students work under the joint direction and supervision of both a teacher with knowledge of early childhood, middle childhood, and adolescence education and exemplary educators or trainers in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, develop materials for educational environments, assist with record keeping, and perform other duties of teachers, trainers, paraprofessionals, or other educational personnel.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies strategies that promote health and wellness by balancing the unique challenges of being an educator with personal responsibilities. The student is expected to:

(A) identify signs of personal stress and anxiety;

(B) choose appropriate boundaries for a healthy work-life balance; and

(C) implement strategies to manage health and wellness.

(2) The student explores the teaching and training profession. The student is expected to:

(A) demonstrate an understanding of the historical foundations of education and training in the United States;

(B) summarize and apply acquired pedagogical knowledge and skills needed by teaching and training professionals;

(C) identify qualities of effective schools;

(D) discuss non-traditional settings for teaching and training careers such as those in corporations, community outreach programs, nonprofits, and government entities; and

(E) formulate a professional philosophy of education based on a personal set of beliefs.

(3) The student understands the learner and the learning process. The student is expected to:

(A) relate and implement principles and theories of human development to teaching and training situations;

(B) relate and implement principles and theories about the learning process to teaching and training situations;

(C) demonstrate and implement behaviors and skills that facilitate the learning process;

(D) explain the relationship between effective instructional practices and providing support for learning differences, learner exceptionality, and learners with special needs;

(E) evaluate backgrounds, strengths, and skills of students when planning instruction; and

(F) demonstrate techniques for developing effective relationships with students that foster mutual respect and rapport and result in effective instruction.

(4) The student interacts effectively in the role of an educator. The student is expected to:

(A) demonstrate effective interaction skills with stakeholders such as students, educators, parents/guardians, community members, and other professionals;

(B) demonstrate methods for promoting stakeholder partnerships in improving educational outcomes; and

(C) describe the procedure for handling and reporting physical or emotional abuse.

(5) The student plans and develops effective instruction. The student is expected to:

(A) explain the role of the Texas Essential Knowledge and Skills in planning and evaluating instruction;

(B) explain the rationale for having a fundamental knowledge of the subject matter in order to plan, prepare, and deliver effective instruction;

(C) explain the rationale for and process of instructional planning components such as vertical alignment and scope and sequence;

(D) describe principles and theories that impact instructional planning;

(E) create clear short-term and long-term learning objectives that are developmentally appropriate for students; and

(F) demonstrate lesson planning to meet instructional goals.

(6) The student creates an effective learning environment. The student is expected to:

(A) describe and implement a safe and an effective learning environment that incorporates the principles of universal design;

(B) analyze and evaluate strategic student grouping techniques that result in effective instruction;

(C) demonstrate teacher and trainer practices that promote an effective learning environment;

(D) evaluate materials and equipment to determine age and grade level appropriateness and to meet the needs of diverse learners;

(E) identify classroom management techniques that promote an effective learning environment; and

(F) demonstrate communication, conflict-management, and mediation techniques supportive of an effective learning environment.

(7) The student assesses teaching and learning. The student is expected to:

(A) describe the role of assessment as part of the learning process;

(B) create assessments to measure student learning;

(C) analyze the assessment process;

(D) use appropriate assessment strategies in an instructional setting; and

(E) use assessment data to evaluate and revise lesson plans.

(8) The student understands the relationship between school and society. The student is expected to:

(A) explain the relationship between school and society;

(B) recognize and use resources for professional growth such as family, school, and community resources; and

(C) collaborate with stakeholders such as family, school, and community to promote learning.

(9) The student develops technology skills. The student is expected to:

(A) describe the role of technology in the instructional process;

(B) use technology applications appropriate for specific subject matter and student needs; and

(C) demonstrate skillful use of technology as a tool for instruction, evaluation, and management.

(10) The student understands the professional, ethical, and legal responsibilities in teaching and training. The student is expected to:

(A) describe teacher and trainer practices that promote professional and ethical conduct;

(B) analyze professional and ethical standards that apply to educators and trainers;

(C) analyze situations requiring decisions based on professional, ethical, and legal considerations; and

(D) analyze expected effects of compliance and noncompliance with the Code of Ethics and Standard Practices for Texas Educators.

(11) The student participates in field-based experiences in education and training. The student is expected to:

(A) apply instructional strategies and concepts within a local educational or training facility; and

(B) document, assess, and reflect on instructional experiences.

(12) The student documents technical knowledge and skills. The student is expected to:

(A) update professional portfolio components such as resume, samples of work, service-learning log, assessment results, and mock scholarship applications; and

(B) present the portfolio to interested stakeholders.

(13) The student demonstrates the knowledge and skills needed to provide meaningful, specific, and timely feedback to students, families, and other school personnel on the growth of students in relation to classroom goals while maintaining student confidentiality. The student is expected to:

(A) explain the role feedback plays in the learning process;

(B) provide guidance and feedback to motivate student behavior and outcomes;

(C) demonstrate methods of providing feedback to students such as checklists, classroom processes, and written documentation;

(D) demonstrate methods of accepting and reflecting on feedback to determine plans for improvement of educational outcomes; and

(E) apply questioning strategies to facilitate student discussion.

(14) The student demonstrates knowledge and understanding of teacher responsibility with regard to accommodations and modifications for students with special needs. The student is expected to:

(A) identify the Individuals with Disabilities Education Act and Section 504 of the Rehabilitation Act of 1973;

(B) explain the structure and components of an individualized education program (IEP);

(C) explain the structure and components of a Section 504 Plan; and

(D) compare accommodations and modifications for students with special needs.

(15) The student demonstrates proper record-keeping strategies needed by teachers to demonstrate evidence of student progress. The student is expected to:

(A) understand and demonstrate the use of learning management systems and record-keeping tools;

(B) outline school district policies related to teacher record keeping; and

(C) identify the essential components of behavioral and academic records according to state and school district policy.

(16) The student uses standard observation techniques to observe a variety of educational settings. The student is expected to:

(A) evaluate teaching styles, learning environments, and classroom management utilizing observation checklists or other observation and evaluation tools; and

(B) use observation and evaluation reports to reflect on teaching practices and develop strategies for improvement.

(17) The student assesses the benefits of how a mentor relationship impacts a teaching career. The student is expected to:

(A) recognize the benefits of a mentor relationship such as increased teacher retention, mentor guidance, and coaching; and

(B) seek out and foster mentorship opportunities.

(18) The student analyzes teacher employment requirements and professional growth opportunities for those in the education profession such as required education and certification. The student is expected to:

(A) describe required education needed to become a certified teacher;

(B) explain the steps for becoming a certified teacher in Texas;

(C) compare certification requirements for various content and grade level areas of interest; and

(D) identify various financial aid sources available for teacher candidates such as scholarships, student loans, and student loan forgiveness options once certified.

§127.343. Practicum in Early Learning (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Child Guidance. Recommended prerequisites: Child Development or Child Development Associate Foundations. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Practicum in Early Learning is a field-based course that provides students background knowledge of early childhood development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher facilitator and an exemplary industry professional. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of early learning teachers, trainers, paraprofessionals, or other educational personnel.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the early childhood education profession. The student is expected to:

(A) analyze current trends and issues that impact early childhood education such as political, societal, and economic trends and issues;

(B) analyze qualities of effective early childhood education professionals and programs;

(C) develop a written summary of professional beliefs and values about early childhood education, how young children learn, and the role of an early educator;

(D) explore the educational and academic requirements and possible degrees and certifications available in early childhood education;

(E) develop and refine a personal career plan in preparation for a career in the field of early childhood development or education;

(F) explore and identify early childhood development or education opportunities in non-traditional settings such as those in corporations, community outreach programs, nonprofits, and government entities; and

(G) explore educational high-needs and teacher-specialty areas such as special education and bilingual and English as a second language education programs.

(2) The student understands the learner and learning process. The student is expected to:

(A) apply and reflect on the application of principles and theories of human development appropriate to early learning situations;

(B) apply and reflect on the application of principles and theories about the learning process to specific early learning situations;

(C) analyze the dynamics of educator and student behaviors that facilitate the early learning process;

(D) analyze teaching skills that facilitate the early learning process and document field-learning experiences; and

(E) demonstrate and evaluate effective instructional practices to accommodate diversity such as learning differences, learner exceptionality, and special-needs considerations.

(3) The student plans and implements effective instruction. The student is expected to:

(A) demonstrate and evaluate techniques promoting early childhood growth and development skills such as language, literacy, numeracy, motor learning, and cross-disciplinary content areas;

(B) develop age-appropriate lesson plans and instructional materials that align to student learning goals;

(C) evaluate the effectiveness of lesson plans and instructional strategies; and

(D) explain how learner and professional feedback is used to guide selection and adjustment of instructional strategies.

(4) The student creates and maintains an effective learning environment. The student is expected to:

(A) create and maintain a safe and an effective learning environment;

(B) integrate teacher or trainer practices that promote an effective learning environment;

(C) apply classroom management techniques that promote an effective learning environment; and

(D) demonstrate specific conflict-management and mediation techniques supportive of an effective learning environment.

(5) The student assesses instruction and learning. The student is expected to:

(A) develop and apply formal and informal assessments to track and monitor student learning and progress; and

(B) analyze assessment data to inform and modify instruction.

(6) The student understands the relationship between school, families, and community in early learning. The student is expected to:

(A) select family services and school and community resources to promote student growth;

(B) promote learning and build support through positive school partnership activities with stakeholders such as families, schools, communities, and business/industry; and

(C) collaborate with professional early learning community members to meet the needs of students and families.

(7) The student develops technology skills appropriate for effectively supporting students in the classroom. The student is expected to:

(A) utilize a variety of assistive technologies that are age-appropriate for specific student learning needs, including for early learners with special needs; and

(B) integrate various educational technologies as tools for instruction, evaluation, communication, and management.

(8) The student understands the professional, ethical, and legal responsibilities of early childhood professionals. The student is expected to:

(A) demonstrate and evaluate effective interaction skills with stakeholders such as students, educators, parents/guardians, community members, and other professionals;

(B) analyze professional and ethical standards that apply to early childhood professionals; and

(C) analyze situations requiring decisions based on professional, ethical, and legal considerations.

(9) The student explores the need and opportunities for continued professional development for early education professionals. The student is expected to:

(A) identify strategies and resources for the professional development of early education professionals such as research and assessment; and

(B) create a plan for professional career growth, including short-term and long-term goals.

(10) The student understands facility operations, including nutrition, program management, and safety guidelines. The student is expected to:

(A) explain the importance of accurate record maintenance such as personnel, student, incident, and facility documentation;

(B) create a meal plan that promotes good nutrition and wellness;

(C) explain the importance of allocation of facility resources and budget management; and

(D) explain the importance of safety procedures and regulations.

(11) The student continues to participate in field-based experiences in early childhood settings. The student is expected to:

(A) apply instructional strategies and concepts within a local educational or training facility; and

(B) document, assess, and reflect on instructional experiences.

(12) The student documents technical knowledge and skills. The student is expected to:

(A) gather artifacts and documentation that support attainment of technical skill competencies;

(B) update a professional portfolio to include components such as a resume, samples of work, service-learning log, recognitions, awards, scholarship essays, letters of recommendation, certifications, evaluations, and Child Development Associate (CDA) requirements; and

(C) present a portfolio to interested stakeholders.

§127.344. Extended Practicum in Early Learning (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Child Guidance. Recommended prerequisites: Child Development or Child Development Associate Foundations. Corequisite: Practicum in Early Learning. This course must be taken concurrently with Practicum in Early Learning and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Extended Practicum in Early Learning is a field-based internship that provides students background knowledge of early childhood development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher facilitator and an exemplary industry professional. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of early learning teachers, trainers, paraprofessionals, or other educational personnel.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) present information formally and informally;

(C) analyze, interpret, and communicate information; and

(D) apply active listening skills to obtain and clarify information.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands the professional, ethical, and legal responsibilities in early childhood education professions. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) show integrity by choosing the ethical course of action when making decisions;

(C) demonstrate proper etiquette and knowledge of acceptable-use policies when using networks, especially resources on the internet and intranet; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(4) The student continues to participate in field-based experiences in early childhood education and education and training professions. The student is expected to:

(A) apply instructional strategies and concepts with increased fluency within a local educational or training facility;

(B) apply principles and theories that impact instructional planning;

(C) develop curriculum and related materials to support instruction that aligns with current child development industry standards;

(D) demonstrate competency in foundation and enrichment subject areas;

(E) create lesson plans that meet instructional goals;

(F) document, assess, and reflect on instructional experiences; and

(G) collect representative work samples.

§127.345. Practicum in Education and Training (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Instructional Practices. Recommended prerequisites: Principles of Education and Training, Human Growth and Development, and Child Development. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is

experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Practicum in Education and Training is a field-based course that provides students background knowledge of child and adolescent development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher with knowledge of early childhood, middle childhood, and adolescence education and exemplary educators in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and perform other duties of classroom teachers, trainers, paraprofessionals, or other educational personnel.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes strategies that promote health and wellness to address the unique challenges in balancing work and personal responsibilities for educators. The student is expected to:

(A) examine signs of personal stress and anxiety;

(B) describe and develop appropriate boundaries for a healthy work-life balance; and

(C) identify and implement strategies to manage health and wellness.

(2) The student explores the teaching and training field and profession. The student is expected to:

(A) analyze current trends and issues that impact education such as political, societal, and economic trends and issues;

(B) analyze practices of effective teaching and training professionals;

(C) analyze qualities of effective schools;

(D) develop a written summary of professional beliefs and values about education and training;

(E) determine the educational and academic requirements and possible degrees and certifications necessary for a profession of interest in teaching and training;

(F) refine a personal career plan in preparation for a career in the field of education or training;

(G) research and identify teaching and training opportunities in non-traditional settings such as those in corporations, community outreach programs, nonprofits, and government entities; and

(H) research and identify educational high-needs and teacher-shortage areas.

(3) The student understands the learner and learning process. The student is expected to:

(A) apply principles and theories of human development appropriate to specific teaching or training situations;

(B) apply principles and theories about the learning process to specific teaching or training situations;

(C) analyze the dynamics of educator and student behaviors that facilitate the learning process;

(D) analyze teaching skills that facilitate the learning process; and

(E) demonstrate and evaluate effective instructional practices to accommodate diversity such as learning differences, learner exceptionality, and special needs.

(4) The student interacts effectively in the role of an educator. The student is expected to:

(A) demonstrate and evaluate effective interaction skills with stakeholders such as students, educators, parents/guardians, community members, and other professionals; and

(B) demonstrate and evaluate techniques that promote literacy and numeracy.

(5) The student plans and uses effective instruction. The student is expected to:

(A) apply principles and theories that impact instructional planning;

(B) use lesson planning tools such as unit plans and scope and sequence and vertical alignment documents;

(C) develop instructional materials that align with the Texas Essential Knowledge and Skills;

(D) demonstrate competency in foundation and enrichment subject areas;

(E) apply research-based practices to create lessons plans that meet instructional goals;

(F) analyze the development of effective instructional strategies;

(G) evaluate and analyze effectiveness of lessons plans and instructional strategies used in a lesson or series of lessons; and

(H) explain how learner and professional feedback is used to guide selection and adjustment of instructional strategies.

(6) The student creates and maintains an effective learning environment. The student is expected to:

(A) apply principles of universal design to create and maintain a safe and effective learning environment;

(B) integrate teacher or trainer practices that promote an effective learning environment;

(C) apply classroom management techniques that promote an effective learning environment; and

(D) demonstrate specific conflict-management and mediation techniques supportive of an effective learning environment.

(7) The student assesses instruction and learning. The student is expected to:

(A) develop and apply formative and summative assessments to foster student learning;

(B) use assessment strategies to promote personal growth and teaching or training improvement;

(C) use self-reflection techniques to promote personal growth and teaching or training improvement; and

(D) use classroom and standardized test assessment data to drive instructional strategy.

(8) The student understands the relationship between school and society. The student is expected to:

(A) identify ways to support learning through advocacy;

(B) identify and select family, school, and community resources that support learning; and

(C) promote learning and build support through positive school partnership activities with stakeholders such as families, schools, communities, and business/industry.

(9) The student develops technology skills. The student is expected to:

(A) access and use current technology applications appropriate for specific subject matter and student needs; and

(B) integrate the use of technology as a tool for instruction, evaluation, and management effectively.

(10) The student understands the professional, ethical, and legal responsibilities in teaching and training. The student is expected to:

(A) analyze teacher and trainer practices that promote professional and ethical conduct;

(B) analyze professional and ethical standards that apply to educators and trainers;

(C) analyze situations requiring decisions based on professional, ethical, and legal considerations; and

(D) analyze potential consequences related to non-compliance with the Code of Ethics and Standard Practices for Texas Educators.

(11) The student explores the need and opportunities for continued professional development for educators and trainers. The student is expected to:

(A) identify strategies and resources for the professional development of educators or trainers such as research and assessment;

(B) demonstrate teacher or trainer practices that promote ongoing professional development and lifelong learning; and

(C) develop a plan for professional growth.

(12) The student participates in field-based experiences in education or training. The student is expected to:

(A) apply instructional strategies and concepts within a local educational or training facility; and

(B) document, assess, and reflect on instructional experiences.

(13) The student documents technical knowledge and skills. The student is expected to:

(A) gather artifacts and documentation that support attainment of technical skill competencies;

(B) update a professional portfolio to include components such as a resume, samples of work, service-learning logs, recognitions, awards, scholarship essays, letters of recommendation, certifications, and evaluations; and

(C) present a professional portfolio to interested stakeholders.

§127.346. Extended Practicum in Education and Training (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Education and Training Career Cluster. Prerequisite: Instructional Practices. Recommended prerequisites: Principles of Education and Training and Human Growth and Development. Corequisite: Practicum in Education and Training. This course must be taken concurrently with Practicum in Education and Training and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Education and Training Career Cluster focuses on planning, managing, and providing education and training services and related learning support services.

(3) Extended Practicum in Education and Training is a field-based internship that provides students background knowledge of child and adolescent development principles as well as principles of effective teaching and training practices. Students in the course work under the joint direction and supervision of both a teacher with knowledge of early childhood, middle childhood, and adolescence education and exemplary educators in direct instructional roles with elementary-, middle school-, and high school-aged students. Students learn to plan and direct individualized instruction and group activities, prepare instructional materials, assist with record keeping, make physical arrangements, and complete other responsibilities of classroom teachers, trainers, paraprofessionals, or other educational personnel.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) effectively present information formally and informally;

(C) analyze, interpret, and effectively communicate information; and

(D) apply active listening skills to obtain and clarify information.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands the professional, ethical, and legal responsibilities in education and training. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) show integrity by choosing the ethical course of action when making decisions;

(C) demonstrate proper etiquette and knowledge of acceptable-use policies when using networks, especially resources on the Internet and intranet; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(4) The student continues to participate in field-based experiences in education and training. The student is expected to:

(A) apply instructional strategies and concepts with increased fluency within a local educational or training facility;

(B) apply principles and theories that impact instructional planning;

(C) develop curriculum and related materials to support instruction that align with the Texas Essential Knowledge and Skills;

(D) demonstrate competency in foundation and enrichment subject areas;

(E) create lessons plans that meet instructional goals;

(F) document, assess, and reflect on instructional experiences; and

(G) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER H. ENERGY

19 TAC §§127.351 - 127.357

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.351. Foundations of Energy (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2020-2021 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of the course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and success in current or emerging energy professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) In Foundations of Energy, students will conduct laboratory and field investigations, use scientific practices during investigations, and make informed decisions using critical thinking and scientific problem solving. Various systems will be described in terms of energy. Students will study a variety of topics that include energy transformation, the law of conservation of energy, energy efficiency, interrelationships among energy resources and society, and sources and flow of energy through the production, transmission, processing, and use of energy. Students will apply these concepts and perform investigations and experiments at least 40% of the time using safe practices.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes current and future career opportunities in the energy sector, including oil and gas exploration and production, refining and chemical processing, and renewable energy. The student is expected to:

(A) evaluate energy systems and identify careers within those systems;

(B) examine past market and employment trends in the energy sector;

(C) discuss current issues in energy production and predict future needs and employment opportunities in this field;

(D) identify career development, education, credentialing, and entrepreneurship opportunities in the energy sector; and

(E) apply competencies related to resources, information, and systems of operation in the energy sector.

(2) The student conducts laboratory and field investigations using safe, environmentally appropriate, and ethical practices. The student is expected to:

(A) demonstrate safe practices during laboratory and field investigations;

(B) use a wide variety of additional course apparatuses, equipment, techniques, and procedures as appropriate such as satellite imagery and other remote sensing data, Geographic Information Systems (GIS), Global Positioning System (GPS), scientific probes, microscopes, telescopes, modern video and image libraries, weather stations, fossil and rock kits, tectonic plate models, and planetary globes;

(C) engage in meaningful hands-on, minds-on conceptual activities in the areas of energy; and

(D) demonstrate an understanding of the use and conservation of resources and proper disposal or recycling of materials.

(3) The student uses critical thinking and problem solving to make informed decisions within and outside the classroom. The student is expected to:

(A) communicate and present valid conclusions from energy information extracted from various sources such as current events, news reports, published journal articles, and marketing materials;

(B) explain the impacts of energy discoveries by a variety of historical and contemporary scientists and entrepreneurs on current societal attitudes;

(C) compare advantages and disadvantages in the use of the various energy sources; and

(D) distinguish between scientific decision making (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(4) The student presents conclusions, research findings, and designs using a variety of media throughout the course. The student is expected to:

(A) develop written and oral presentation skills related to energy issues and solutions by researching and describing the history of energy production in Texas and contributions of scientists and entrepreneurs; and

(B) develop data retrieval and analysis skills related to energy production and use by researching information about energy sources, including renewable and non-renewable sources, and energy efficiency and how each source is used to produce electrical energy.

(5) The student examines and explains concepts and procedures related to energy. The student is expected to:

(A) identify general purposes for energy, including transportation, light, cooking, heating or cooling, entertainment, and cleaning;

(B) explain and demonstrate transformations among various energy forms, including potential, kinetic, chemical, mechanical, electrical, and light energy;

(C) analyze the role of gravity in transforming energy;

(D) investigate and calculate the relationship between work, potential energy, and kinetic energy;

(E) examine various types of energy transfer mechanisms, determine the original form of energy and what form that energy is being transformed into, and use examples to analyze and calculate the relationships among work, kinetic energy, and potential energy;

(F) describe and apply the law of conservation of energy; and

(G) use basic calorimetry to determine the amount of energy stored in substances such as coal.

(6) The student understands the basics of fluid mechanics related to energy discovery, production, and transportation. The student is expected to:

(A) identify fluids used as fuels, including liquids and gases;

(B) identify fluids used in the discovery, production, and transportation of energy sources;

(C) explain capillary action and relate it to energy production; and

(D) explain, using formulas, how pressure and temperature affect the behavior of fluids.

(7) The student understands how and where energy is produced and identifies Texas energy resources. The student is expected to:

(A) research the location of energy resources and power production plants in Texas;

(B) compile information on the history of energy production in Texas and describe its past and current importance to the U.S. economy;

(C) investigate the role of technology in the future development of energy usage;

(D) identify ways to conserve energy;

(E) map the major sources of energy used in Texas;

(F) assess the impact of the various energy sources on the economy in Texas;

(G) analyze how supply and demand impacts Texas's economy in relation to energy; and

(H) compare and contrast the impact of energy sources and supply and demand in Texas with national and global data.

(8) The student investigates how energy resources such as water, oil, and natural gas are stored underground in rock formations. The student is expected to:

(A) assess the properties and geological histories of rocks and rock formations that enable energy storage;

(B) determine the physical properties of permeability and porosity of rock formations and relate these properties to the amount of water, oil, and natural gas held in these formations;

(C) explain how aquifers function and locate major aquifers in Texas; and

(D) investigate how innovations such as hydraulic fracturing and high-power transmission lines have made massive energy resources such as oil, gas, wind, and electricity available in Texas.

(9) The student knows differences between renewable and non-renewable resources. The student is expected to:

(A) identify and describe various renewable and non-renewable resources;

(B) describe and compare the energy efficiency of renewable and non-renewable energy derived from natural and alternative sources such as oil, natural gas, coal, nuclear, solar, geothermal, hydroelectric, and wind;

(C) examine the benefits and hazards of using renewable and non-renewable energy sources;

(D) research methods by which benefits can be increased and hazards reduced in the use of renewable and non-renewable energy sources;

(E) examine different viewpoints of an energy source regarding availability, cost, potential pollution, impact to plant and animal habitat, and sustainability;

(F) analyze an energy source's relative availability and renewability and discuss how these factors inform decision making regarding a source's use; and

(G) analyze changing social perspectives and how they can influence scientific practices.

(10) The student knows how energy impacts the student's life and the role energy plays in international relations, the environment, standards of living, and the economy. The student is expected to:

(A) analyze the impact energy has on the environment;

(B) research and discuss the ethical and social issues surrounding Earth's energy resources;

(C) analyze the advantages and disadvantages of an energy source's long-term use;

(D) explain the relationship between energy and quality of life;

(E) research and describe the connection between energy production, transmission, processing, and marketing; and

(F) analyze the impact and effectiveness of the measures taken by the United States and other countries to use energy to reduce greenhouse gases, improve water and air quality, and extend life expectancy.

(11) The student investigates extended learning experiences such as career and technical student organizations and area energy museums and displays. The student is expected to:

(A) identify a minimum of three energy professionals for potential speaking invitations either in person or via the Internet;

(B) research and describe an energy-related organization such as a museum or local business; and

(C) compare educational requirements for different energy industry jobs in Texas.

§127.352. Oil and Gas Production I (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) In Oil and Gas Production I, students will identify specific career opportunities and skills, abilities, tools, certification, and safety measures associated with each career. Students will also understand components, systems, equipment, and production and safety regulations associated with oil and gas wells. To prepare for careers in oil and gas production, students must attain academic skills and knowledge, acquire technical knowledge and skills related to oil and gas production and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the history of and process for drilling a well. The student is expected to:

(A) describe the history of drilling for petroleum in the United States and abroad;

(B) describe and appraise routine drilling operations, offshore drilling, and new drilling technologies;

(C) describe the tools and techniques for directional drilling;

(D) examine the differences between fishing, retrieving, and repairing pipe;

(E) describe the methods for completing a well in order for production to begin;

(F) assess fluid pressure;

(G) determine how the flow is initiated in a new well;

(H) differentiate between major components of a well and discuss the purpose, design, and operation of each component;

(I) describe activities associated with completing a well;

(J) describe the well completion processes and equipment;

(K) summarize the instruments and techniques used when logging and testing during the drilling and completion of a well;

(L) list the factors that are analyzed when studying a poorly producing well; and

(M) identify the responsibilities, characteristics, abilities, and work behaviors of personnel that are involved in well service.

(2) The student discusses and identifies components, systems, equipment, production, and safety regulations associated with oil and gas wells. The student is expected to:

(A) identify the major systems and equipment used in the production of oil and gas;

(B) identify and describe the wellhead equipment that controls fluid flow;

(C) trace the process flow through the oil and gas production systems and equipment;

(D) discuss the purpose of the wellhead and identify the major components;

(E) describe the purpose, design, and operation of each wellhead component;

(F) compare and contrast the major differences in wellhead construction;

(G) compare and contrast onshore and offshore facilities;

(H) compare and contrast oil and gas regions within the United States;

(I) describe the safety, health, and environmental concerns associated with working around a wellhead;

(J) explain how the wellhead system affects other production systems tied to the wellhead;

(K) describe the activities associated with monitoring and regulating well flow;

(L) describe the wellhead maintenance activities performed by the production technician;

(M) operate and troubleshoot a wellhead using a computer simulator, pilot plant, or tabletop unit; and

(N) identify the operating conditions that would warrant a manual or automatic shut-in of a well and steps involved in a manual shut-in of a well.

(3) The student discusses safety issues related to the oil and gas industry. The student is expected to:

(A) describe the safety, health, and environmental concerns associated with drilling, production, and maintenance; and

(B) research safety standards in the petroleum industry such as the Bureau of Safety and Environmental Enforcement (BSEE), United States Coast Guard (USCG), American Petroleum Institute (API), Department of Transportation (DOT), Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA), American Society for Testing and Materials (ASTM), American National Standards Institute (ANSI), and others.

§127.353. Oil and Gas Production II (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Oil and Gas Production I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) In Oil and Gas Production II, students will gain knowledge of the specific requirements for entry into post-secondary education and employment in the petroleum industry; research and discuss petroleum economics; research and discuss the modes of transportation in the petroleum industry; research and discuss environmental, health, and safety concerns; research and discuss different energy sources; and prepare for industry certification. To prepare for careers in oil and gas production, students must attain academic skills and knowledge, acquire technical knowledge and skills related to oil and gas production and the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success, students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and discusses the modes of transportation and environmental, health, and safety concerns. The student is expected to:

(A) describe evolution of transportation in the petroleum industry;

(B) research and access the various ground methods of transportation;

(C) survey health and safety policies, procedures, regulations, and practices as they relate to transportation in the petroleum industry;

(D) research and discuss petroleum economics;

(E) compare marketing, sales, and distribution of petroleum products;

(F) identify supply chain businesses that create new supplies of oil and gas;

(G) identify supply creation companies and how they operate;

(H) discuss the factors in investment decision making; and

(I) calculate rates of return to evaluate prospects.

(2) The student researches the different methods of disposing of oil and gas waste and methods of cleanup. The student is expected to:

(A) discuss the disposal methods of exploration and production wastes;

(B) identify cleanup methods for blowouts and spills; and

(C) identify refining processes that minimize environmental impact.

(3) The student researches and identifies the different energy sources and priorities for the oil and gas industry. The student is expected to:

(A) research the petroleum industry to identify renewable energy sources;

(B) present the challenges and priorities of the petroleum industry;

(C) research the critical technologies needed in the future; and

(D) research the nontechnical solutions to energy needs.

§127.354. Oil and Gas Production III (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2020-2021 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Oil and Gas Production II. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) In Oil and Gas Production III, students will gain knowledge of hydraulic and pneumatic systems and skill requirements to work in oil and gas and related industries. Students complete an advance core curriculum that includes hydraulic and pneumatic systems involved in oil and gas production. This program is designed to train students in all areas of down and mid-stream operation skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies the importance of oil field hydraulics and its contributions to the oil and gas industry. The student is expected to:

(A) identify companies that contributed to oil field hydraulics and fracturing and discuss those contributions;

(B) explain the history of hydraulic fracturing and its importance to the oil field industry and the process of producing wells in North America;

(C) describe the impact of hydraulics on energy in North America; and

(D) explain the impact on new oil and natural gas production in North America as it relates to technology.

(2) The student demonstrates an understanding of pneumatics and hydraulics and their significance and application in the petroleum engineering industry. The student is expected to:

(A) describe and define the basic functional components of the pneumatic system and the function of a pneumatic schematic;

(B) explain pneumatic pressure and identify its unit of measure during application procedures;

(C) explain the importance of a hydraulic system and identify the hydraulic system's five basic components (hydraulic pump, control valves, actuators, reservoir, and accumulators), including the hydraulic system's significance in the petroleum engineering industry; and

(D) define hydraulics and identify its unit of measure during application procedures.

(3) The student explains and demonstrates the six pneumatic safety rules and the importance of the rules in the petroleum industry. The student is expected to:

(A) explain the six pneumatic safety rules, including wearing safety glasses when building and operating pneumatics, keeping fingers clear of piston rods, never blowing compressed air at anyone, not turning the main air supply on until a circuit is connected, turning the air off if air is leaking from a joint, and turning the air off before altering a circuit;

(B) demonstrate safety precaution measures in pneumatics and discuss the importance of safety equipment during this process; and

(C) demonstrate and explain the importance of a pressure regulator in pneumatics, including the historical significance.

(4) The student demonstrates an understanding of basic cylinder circuits and pneumatic cylinder circuits and their significance and applications in the petroleum engineering industry. The student is expected to:

(A) explain the functions of the operation of a double acting pneumatic cylinder and each of its functions;

(B) describe the operation of five-way three-position directional control valves (DCV);

(C) describe the function of a pneumatic quick-connect fitting; and

(D) demonstrate how to safely connect the pneumatic circuit with a quick-connect fitting.

(5) The student understands the impact of a hydraulic schematic in oil field applications. The student is expected to:

(A) describe ISO symbols and appropriately use them to draw a hydraulic schematic; and

(B) create a hydraulic schematic.

(6) The student identifies the principles of hydraulic pressure and flow and discusses the basic hydraulic cylinder circuits and their application. The student is expected to:

(A) calculate the force output of an extending cylinder and the retraction force of a cylinder;

(B) explain the relevance of Pascal's Law to hydraulics;

(C) identify and discuss hydraulic motors and pumps; and

(D) identify hydraulic cylinders and their impact on single and double acting circuits.

§127.355. Oil and Gas Production IV (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2020-2021 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Oil and Gas Production III. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content alignment with challenging academic standards and relevant knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) Oil and Gas Production IV is designed to extend training for future petroleum engineering technicians in all areas of down and mid-stream operations. Students complete an intense core curriculum in areas that include hydrocarbon safety, drilling, petroleum geology, oil and gas exploration and production, reservoir operations, well head completions, petroleum data management operations and analysis, natural gas production, and economics. In conjunction with this course, students employ the latest computer software in engineering and petroleum, operations, data mining, and geological mapping.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explains the phases of well construction. The student is expected to:

(A) describe the function of the well completion phase and the different hole tests used in well completions;

(B) design the completion of the reservoir using technology such as computer designing software;

(C) describe the open hole completion and sand control completion processes; and

(D) describe conventional completions and their components and how they relate to production tubing.

(2) The student explains the concepts of safety in well completions and indicates tools and procedures for completing a drilled wellbore. The student is expected to:

(A) research health and safety standards for the workplace and environment such as Standards and Wireline Operations and Procedures and Occupational Safety and Health Administration (OSHA) and standards provided by professional organizations in the oil and gas industry such as the American Chemical Society, American Institute of Chemical Engineers, Center for the Advancement of Process Technology, Gulf Coast Process Technology Alliance, and American Petroleum Institute (API);

(B) identify well completion tools and equipment and their use during each well completion phase; and

(C) analyze the cost of safety during well completions.

(3) The student explains the concepts of hydraulic fracturing and its role during the well completion phase. The student is expected to:

(A) describe how the generic well design and drilling mud systems impact drilling;

(B) interpret ways in which generic platform wells, cuttings disposal routes, and drilling fluid design impact the generic well design; and

(C) evaluate the significance of reservoir formations.

(4) The student discusses the potential hazards and possible solutions of well and equipment testing. The student is expected to:

(A) evaluate potential hazards and formulate a safety plan that covers safety guidelines and equipment, including first-aid and safety uniforms;

(B) describe and accurately measure the flow of oil, gas, and water in real time;

(C) ensure precautions and measures are considered during the surface well testing; and

(D) discuss the importance of knowing the surrounding environment when well testing.

(5) The student researches the different types of coring and core analysis used in well completions and how they play an important role in well completion. The student is expected to:

(A) describe the role of coring and core analysis in well completions;

(B) identify the relationship between the factors such as core analysis and well logging that play an active role in well completions;

(C) explain well logging and its importance in formation evaluation;

(D) research different methods of formation testing by acquiring core samples;

(E) research drill stem testing;

(F) explain drill stem tests and their importance in measuring the flow of oil and gas in well completions; and

(G) evaluate the cost of completion operations for well completion.

§127.356. Introduction to Process Technology (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2020-2021 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) In Introduction to Process Technology, students will learn the social significance and workforce impact of process technology in industry and the opportunities available at various levels of education and training in industries using process technology.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands common definitions, terminology, and the basic foundations related to process technology. The student is expected to:

(A) describe the types of industry utilizing process technology and identify fields related to process technology;

(B) identify and describe the career opportunities in process technology, pathways to career development, and certification requirements of industries utilizing process technology, including job responsibilities, typical work schedules, and career opportunities;

(C) demonstrate the use of content such as technical concepts and vocabulary when analyzing information and following directions;

(D) identify currently emerging issues in process technology; and

(E) identify principles of instruments and instrument technology used in industrial process technology.

(2) The student identifies and discusses types of industrial piping, valves, and basic process equipment. The student is expected to:

(A) discuss the basics of piping, valves, and equipment used in industry; and

(B) demonstrate the ability to read and interpret the various types of industrial drawings, diagrams, and data sheets related to industrial piping, valves, and equipment.

(3) The student identifies and discusses the types of industrial electrical equipment and instrumentation used in process technology. The student is expected to:

(A) demonstrate the ability to read and interpret the various types of industrial drawings, diagrams, charts, and data sheets related to industrial electrical equipment;

(B) interpret industry standard circuit schematics;

(C) identify areas where quality, reliability, and safety can be integrated into a product; and

(D) describe the principles of electricity as applied in industrial process technology.

(4) The student discusses safety issues related to industrial process technology. The student is expected to:

(A) describe the safety, health, and environmental concerns and requirements for industries using process technology along with the history that led to modern standards;

(B) analyze and execute safety guidelines as described in various manuals, instructions, and regulations;

(C) describe the implications of negligent or improper maintenance;

(D) discuss and demonstrate how precision measuring instruments are used in industrial process technology; and

(E) research agencies that govern safety in industrial process technology, including their authority and requirements.

(5) The student demonstrates understanding of basic industrial mathematics. The student is expected to:

(A) perform common computations required in industrial process technology using mastered calculator skills;

(B) determine when to convert between fractions, decimals, whole numbers, and percentages mentally, on paper, or with a calculator when required in industrial process technology;

(C) identify and quantify causes and effects of uncertainties in measured data;

(D) demonstrate how exponents, symbols, and the order of operations are used to solve real world word problems commonly seen in process technology;

(E) determine appropriate formulas to compute cross sections, surface areas, and volumes of geometric figures such as circles, squares, and cylinders;

(F) estimate measurements and solve application problems involving industry drawings and data sheets using consistent units for all measurements and computation;

(G) describe and discuss how to use scientific notation and International System (SI) units to gather and record data with accuracy and precision;

(H) organize and evaluate data and make inferences from data, including the use of tables, charts, and graphs;

(I) determine a dimension of an object given a scaled drawing having no dimensions; and

(J) represent and solve problems involving proportional relationships, including conversions between measurement systems using multiplication by a given constant factor such as unit rate.

(6) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem to develop innovative solutions;

(B) critically analyze information to determine value to the problem-solving task;

(C) analyze a variety of problem-solving strategies and critical-thinking skills; and

(D) conduct technical research to gather information necessary for decision making.

(7) The student applies comprehensive knowledge in a simulation environment to demonstrate the mastery of the concepts covered in this course. The student is expected to:

(A) represent or simulate a portion of a process system by generating an appropriate drawing, diagram, or data sheet;

(B) demonstrate how to achieve a specific goal with the use of a simple mockup of a process system;

(C) execute a simple mockup of a process system to achieve a specified goal;

(D) demonstrate appropriate safety equipment selection for use in a variety of assigned tasks;

(E) identify and apply mathematical operations to complete calculations and specified computations, including unit conversions for a simulated process system;

(F) explain how visual depictions, data readouts, and trends in a computer-based process simulator relate to actual valves, piping, equipment, electrical gear, and instrumentation in a process system; and

(G) develop critical-thinking skills using simulations to identify and solve problems associated with process technology.

(8) The student presents conclusions, research findings, and designs using a variety of media throughout the course. The student is expected to:

(A) discuss and critique the validity of conclusions supported by the data through various methods such as lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports; and

(B) record, express, and manipulate relationships among data using graphs, charts, and equations.

§127.357. Petrochemical Safety, Health, and Environment (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2020-2021 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. The course is recommended for students in Grades 11 and 12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Energy Career Cluster focuses on Texas's diverse economic landscape, geography and natural resources, including renewable energy potential, transportation system, labor force, and leadership in environmental research.

(3) Petrochemical Safety, Health, and Environment addresses the shortage of process technology operators/technicians by educating students on the safety rules, regulations, and operations of the petrochemical process technology operator. Students enrolled in this course will learn about the knowledge and skills required in occupational safety, health, and environment as well as the governing regulatory authorities and the legal aspects of the industry in order to maintain a safe work environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student examines compliance standards to ensure safe work practices as they relate to safety, health, and environmental regulations. The student is expected to:

(A) identify the legal governing agencies and describe regulatory requirements as they apply to the petrochemical industry, its employees, and the community;

(B) identify specific state and federal regulations and the related specific tasks performed by process technology operators/technicians;

(C) identify safety programs used in the gulf coast area;

(D) determine types of administrative controls and permitting systems to ensure safe work practices, especially as the controls relate to confined spaces and log-out and tag-out (LOTO);

(E) demonstrate the proper usage of typical safety equipment and systems used in local plants;

(F) describe how engineering controls are designed to allow process technology operators/technicians to operate equipment with system safeguards;

(G) describe the different types of personal protective equipment (PPE), including fire resistant clothing (FRC), hard hats, safety shoes, hearing protection, safety glasses, and acid suits;

(H) evaluate the types of monitors that measure exposure ratings for noise, heat, and radiation;

(I) describe the different types of respiratory protection according to their levels of protection, including air purifying, air supply, escape packs, and self-contained breathing apparatus (SCBA); and

(J) identify the types of monitoring instruments that process operators/technicians use to monitor the atmosphere, oxygen content, explosive atmosphere, and toxicity.

(2) The student summarizes the environmental requirements that are designed to safeguard society. The student is expected to:

(A) describe the types of spills and releases and the environmental factors that can impact them;

(B) identify specific systems that are in place to mitigate or prevent hazards to the environment and to individuals, including safe disposal of hazardous materials;

(C) identify the regulatory governmental agencies, including Occupational Safety and Health Administration (OSHA), Mining Safety and Health Administration (MSHA), Texas Commission on Environmental Quality (TCEQ), and the Environmental Protection Agency (EPA), that protect our safety, health, and environment;

(D) identify the Hazard Communication (HAZCOM) program and its components, including written Emergency Response Plans (ERPs), labeling containers that contain hazardous chemicals, and Safety Data Sheets (SDS) for hazardous chemicals produced or imported;

(E) describe the different types of hazards, including fire and explosions, ergonomic, biological, and blood borne pathogens; and

(F) describe the Maritime Security Act (MARSEC), which protects against terroristic threats.

(3) The student describes equipment and energy and work surface hazards. The student is expected to:

(A) define the types of equipment and energy and work surface hazards, including electrical, rotating equipment, thermal, elevation/heights/fall protection, chemical, slip and trips, and machine guarding;

(B) identify hazards as they pertain to construction, vehicles, weather, and security, and describe how to protect the point of access and the site, including contractors who might have limited safety knowledge, new equipment installation, traffic control, and training on heavy machinery; and

(C) determine how weather conditions can adversely impact safety at a petrochemical plant or other process industry, including heat stress, hurricanes, freeze precautions, adverse weather conditions, lightning, and wind.

(4) The student identifies environmental pollutants as well as regulations to protect the environment. The student is expected to:

(A) describe environmental pollutants, including toxic chemicals;

(B) identify the Material Safety Data Sheet (MSDS) manual list of the hazardous and toxic chemicals for process control sites;

(C) summarize the EPA petition process for approval of chemicals created by a plant;

(D) determine the permissions that must be acquired before site production begins, including a toxicology report such as a Chemical Inventory Management System (CIMS) for a local plant; and

(E) describe the types of environmental controls that are in place to protect the environment such as monitoring and air and water permits.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER I. ENGINEERING

19 TAC §§127.391 - 127.401

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.391. Principles of Applied Engineering (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Principles of Applied Engineering provides an overview of the various fields of science, technology, engineering, and mathematics and their interrelationships. Students develop engineering communication skills, which include computer graphics, modeling, and presentations, by using a variety of computer hardware and software applications to complete assignments and projects. Upon completing this course, students will have an understanding of the various fields of engineering and be able to make informed career decisions.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student investigates the components of engineering and technology systems. The student is expected to:

(A) investigate and report on the history of engineering disciplines, including chemical, civil, electrical, and mechanical engineering;

(B) identify the inputs, processes, and outputs associated with technological systems;

(C) describe the difference between open and closed systems;

(D) describe how technological systems interact to achieve common goals;

(E) compare engineering, science, and technology career paths, including entry-level employment, military service, apprenticeships, community and technical colleges, and universities;

(F) conduct and present research on emerging and innovative technology; and

(G) demonstrate proficiency of the engineering design process.

(2) The student presents conclusions, research findings, and designs using a variety of media throughout the course. The student is expected to:

(A) use clear and concise written, verbal, and visual communication techniques;

(B) maintain a design and computation engineering notebook;

(C) develop and present ideas using sketching and computer-aided design and drafting (CADD);

(D) draw conclusions using industry-standard visualization techniques and media;

(E) maintain a paper or digital portfolio using the engineering documentation process; and

(F) use collaborative tools such as desktop or web-based applications to share and develop information.

(3) The student uses appropriate tools and demonstrates safe work habits. The student is expected to:

(A) master relevant safety tests;

(B) follow lab safety guidelines as prescribed by instructor in compliance with local, state, and federal regulations;

(C) identify industry safety terminology related to the personal work environment such as Occupational Safety and Health Administration (OSHA), American Society of Mechanical Engineers (ASME), and personal protective equipment (PPE);

(D) recognize the classification of hazardous materials and wastes;

(E) describe appropriate ways to dispose of hazardous materials and wastes;

(F) maintain, safely handle, and properly store laboratory equipment;

(G) describe the implications of negligent or improper maintenance; and

(H) demonstrate the use of precision measuring instruments.

(4) The student describes the factors that affect the progression of technology and analyzes the potential intended and unintended consequences of technological advances. The student is expected to:

(A) describe how technology has affected individuals, societies, cultures, economies, and environments;

(B) describe how the development and use of technology influenced past events;

(C) describe how and why technology progresses; and

(D) predict possible changes caused by the advances of technology.

(5) The student thinks critically and applies fundamental principles of system modeling and design to multiple design projects. The student is expected to:

(A) identify and describe an engineering design process needed for a project, including the design process and prototype development and initiating, planning, executing, monitoring and controlling, and closing a project;

(B) identify the chemical, mechanical, and physical properties of engineering materials and identify testing methods associated with the materials;

(C) use problem-solving techniques to develop technological solutions such as product, process, or system;

(D) use consistent units for all measurements and computations; and

(E) assess the risks and benefits of a design solution.

(6) The student understands the opportunities and careers in fields related to robotics, process control, and automation systems. The student is expected to:

(A) describe applications of robotics, process control, and automation systems;

(B) apply design concepts to problems in robotics, process control, and automation systems;

(C) identify fields and career opportunities related to robotics, process control, and automation systems; and

(D) identify emerging trends in robotics, process control, and automation systems.

(7) The student understands the opportunities and careers in fields related to electrical and mechanical systems. The student is expected to:

(A) describe the applications of electrical and mechanical systems;

(B) describe career opportunities in electrical and mechanical systems;

(C) identify emerging trends in electrical and mechanical systems; and

(D) describe and apply basic electronic theory.

(8) The student collaborates as a team member while completing a comprehensive project. The student is expected to:

(A) apply the design process, including decision matrices, as a team participant;

(B) perform different roles within the project as a team member;

(C) formulate decisions using collaborative strategies such as decision and design matrices and conflict resolution;

(D) maintain an engineering notebook for the project;

(E) develop and test the model for the project; and

(F) demonstrate communication skills by preparing and presenting the project, including building consensus setback resolution and decision matrices.

(9) The student demonstrates a knowledge of drafting by completing a series of drawings that can be published by various media. The student is expected to:

(A) set up, create, and modify drawings;

(B) store and retrieve geometry;

(C) demonstrate and use appropriate line types in engineering drawings;

(D) draw two-dimensional, single-view objects;

(E) create multi-view working drawings using orthographic projection;

(F) dimension objects using current American National Standards Institute (ANSI) standards;

(G) draw single-line two-dimensional pictorial representations; and

(H) create working drawings that include section views.

(10) The student creates justifiable solutions to open-ended real-world problems using engineering design practices and processes. The student is expected to:

(A) identify and define an engineering problem;

(B) formulate goals, objectives, and requirements to solve an engineering problem;

(C) determine the design parameters such as materials, personnel, resources, funding, manufacturability, feasibility, and time associated with an engineering problem;

(D) establish and evaluate potential constraints, including health, safety, social, environmental, ethical, political, regulatory, and legal, pertaining to a problem;

(E) identify or create alternative solutions to a problem using a variety of techniques such as brainstorming, reverse engineering, and researching engineered and natural solutions;

(F) test and evaluate proposed solutions using engineering methods such as creating models, prototypes, mock-ups, or simulations or performing critical design review, statistical analysis, or experiments;

(G) apply structured techniques such as a decision tree, design matrix, or cost-benefit analysis to select and justify a preferred solution to a problem;

(H) predict performance, failure modes, and reliability of a design solution; and

(I) prepare a project report that clearly documents the designs, decisions, and activities during each phase of the engineering design process.

§127.392. AC/DC Electronics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Applied Engineering. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) AC/DC Electronics focuses on the basic electricity principles of alternating current/direct current (AC/DC) circuits. Students will demonstrate knowledge and applications of circuits, electronic measurement, and electronic implementation. Through use of the design process, students will transfer academic skills to component designs in a project-based environment. Students will use a variety of computer hardware and software applications to complete assignments and projects. Additionally, students will explore career opportunities, employer expectations, and educational needs in the electronics industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates the skills necessary for success in a technical career. The student is expected to:

(A) identify training, education, employment, and career opportunities, including differences between an electronic technician, electronic technologist, and electrical engineer;

(B) investigate and work toward industry certifications;

(C) discuss ethical issues related to electronics;

(D) identify and demonstrate respect for diversity in the workplace;

(E) identify and demonstrate appropriate actions and consequences relating to discrimination, harassment, and inequality;

(F) explore career preparation learning experiences, including job shadowing, mentoring, and apprenticeship training; and

(G) discuss Accreditation Board for Engineering and Technology (ABET) accreditation and implications.

(2) The student participates in team projects in various roles. The student is expected to:

(A) explain the importance of teamwork in the field of electronics;

(B) apply principles of effective teamwork and problem solving, including collaboration and conflict resolution; and

(C) demonstrate proper attitudes as a team leader and team member.

(3) The student develops skills for managing a project. The student is expected to:

(A) implement project management methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) develop a project schedule and complete work according to established criteria;

(C) participate in the organization and operation of a real or simulated engineering project; and

(D) develop a plan for production of an individual product.

(4) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) comply with safety guidelines as described in various manuals, instructions, and regulations;

(C) identify governmental and organizational regulations for health and safety in the workplace related to electronics;

(D) identify and classify hazardous materials according to Occupational Safety and Health Administration (OSHA) regulations and industry standards;

(E) dispose of hazardous materials appropriately;

(F) perform maintenance on selected tools, equipment, and machines;

(G) handle and store tools and materials correctly; and

(H) describe the results of improper maintenance of material, tools, and equipment.

(5) The student develops an understanding of basic direct current (DC) electricity principles. The student is expected to:

(A) describe DC and give examples of its application and generation;

(B) demonstrate an understanding of atomic theory and the relationship between atomic number and a material's conductivity and insulation characteristics;

(C) identify and apply the proper use of electronic schematics and symbols, including switches, voltage, current, ground, resistors, fuses, circuit breakers, volt meters, and amp meters;

(D) define and describe switches, voltage source, current source, ground, resistors, fuses, circuit breakers, volt meters, amp meters, voltage, current, and resistance;

(E) identify the resistance value from the resistor color code;

(F) express Ohm's Law in three forms with appropriate symbols and units;

(G) express the Power Law in three forms with appropriate symbols and units;

(H) describe series, parallel, and combination circuits;

(I) apply Ohm's Law to calculate current, voltage drops, and resistance for each component in a multi-component series, parallel, and combination circuit;

(J) apply the Power Law to calculate current, voltage drops, resistance, and power for each component in a multi-component series, parallel, and combination circuit; and

(K) express current and resistance values in both scientific notation and engineering notation.

(6) The student develops an understanding of basic alternating current (AC) electricity principles. The student is expected to:

(A) describe AC and give examples of its application and generation;

(B) calculate peak, peak-to-peak, average, and root mean square (RMS) voltage;

(C) explain the relationship between mechanical load and current in a generator;

(D) identify the purpose and application of a transformer;

(E) identify voltage and current values relative to a turns ratio in a transformer;

(F) describe and calculate capacitance and capacitive reactance; and

(G) describe and calculate inductance and inductive reactance.

(7) The student implements the concepts and skills that form the technical knowledge of electronics using project-based assessments. The student is expected to:

(A) apply Ohm's law, Kirchhoff's laws, and power laws to actual or simulated circuits;

(B) build series, parallel, and combination circuits;

(C) demonstrate an understanding of magnetism and induction as they relate to electronic circuits;

(D) perform electrical-electronic troubleshooting assignments;

(E) identify actual electronic components, including resistors, capacitors, switches, fuses, power sources, and inductors;

(F) explain how torque is produced in a motor; and

(G) explain where counter electromotive force (CEMF) comes from in a motor.

(8) The student applies the concepts and skills to simulated and actual work situations. The student is expected to:

(A) measure and calculate resistance, current, voltage, and power in series, parallel, and complex circuits;

(B) apply electrical theory to generators, electric motors, and transformers; and

(C) design analog circuits using common components.

(9) The student learns the function and application of the tools, equipment, and materials used in electronics through project-based assignments. The student is expected to:

(A) use tools and laboratory equipment in a safe manner to construct and repair circuits;

(B) use precision measuring instruments to analyze circuits and prototypes;

(C) demonstrate an understanding of the difference between current and voltage measurement;

(D) use a multimeter to perform resistance, voltage, and current measurements;

(E) describe and perform measurements, including period and amplitude, using an oscilloscope;

(F) use multiple software applications to simulate circuit behavior and present concepts; and

(G) use a project notebook to record measured values, lab observations and results, circuit operational requirements, and circuit design and modifications.

(10) The student designs a circuit using appropriate design processes and techniques. The student is expected to:

(A) interpret industry standard circuit schematics;

(B) identify areas where quality, reliability, and safety can be designed into a circuit;

(C) improve a circuit design to meet a specified need;

(D) sketch schematics; and

(E) explore new technologies that may affect electronics.

(11) The student builds a prototype circuit using the appropriate tools, materials, and techniques. The student is expected to:

(A) identify and describe the steps needed to produce a prototype;

(B) identify and use appropriate tools, equipment, machines, and materials to produce the prototype; and

(C) present a final project using a variety of media.

§127.393. Solid State Electronics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: AC/DC Electronics. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Solid State Electronics, students will demonstrate knowledge and applications of advanced circuits, electrical measurement, and electrical implementation used in the electronics and computer industries. Students will transfer advanced academic skills to apply engineering principles and technical skills to troubleshoot, repair, and modify electronic components, equipment, and power electronic systems in a project-based environment. Additionally, students will explore career opportunities, employer expectations, and educational needs in the electronics industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates the skills necessary for success in a technical career. The student is expected to:

(A) identify training, education, employment, and career opportunities, including differences between an electronic technician, electronic technologist, and electrical engineer;

(B) identify employment and career opportunities;

(C) identify industry certifications;

(D) discuss ethical issues related to electronics and incorporate proper ethics in submitted projects;

(E) identify and demonstrate respect for diversity in the workplace;

(F) identify appropriate actions and consequences relating to discrimination, harassment, and inequality;

(G) explore electronics career and preparation programs;

(H) explore career preparation learning experiences, including, but not limited to, job shadowing, mentoring, and apprenticeship training; and

(I) discuss Accreditation Board for Engineering and Technology (ABET) accreditation and implications.

(2) The student participates in team projects in various roles. The student is expected to:

(A) explain the importance of teamwork in the field of electronics;

(B) apply principles of effective teamwork and problem solving, including collaboration and conflict resolution; and

(C) demonstrate proper attitudes as a team leader and team member.

(3) The student develops skills for managing a project. The student is expected to:

(A) implement project management methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) develop a project schedule and complete work according to established criteria;

(C) participate in the organization and operation of a real or simulated engineering project; and

(D) develop a plan for production of an individual product.

(4) The student demonstrates principles of project documentation and work flow. The student is expected to:

(A) complete work orders and related documentation;

(B) identify factors affecting cost and strategies to minimize costs;

(C) prepare a project budget;

(D) prepare a production schedule;

(E) identify intellectual property and other legal restrictions; and

(F) read and interpret technical drawings, manuals, and bulletins.

(5) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) comply with safety guidelines as described in various manuals, instructions, and regulations;

(C) identify governmental and organizational regulations for health and safety in the workplace related to electronics;

(D) identify and classify hazardous materials and wastes according to Occupational Safety and Health Administration (OSHA) regulations and industry standards;

(E) dispose of hazardous materials and wastes appropriately;

(F) perform maintenance on selected tools, equipment, and machines;

(G) handle and store tools and materials correctly; and

(H) describe the results of negligent or improper maintenance of material, tools, and equipment.

(6) The student implements the concepts and skills that form advanced knowledge of electronics using project-based rubrics. The student is expected to:

(A) apply Ohm's law, Kirchhoff's laws, and power laws to advanced circuit theory;

(B) demonstrate advanced knowledge of the theory of direct current, alternating current, digital circuits, and semi-conductor circuits through Thevenin and Norton's theorems;

(C) apply knowledge of voltage regulation devices;

(D) apply knowledge of the design and use of diodes, transistors, and analog components with integrated circuits;

(E) implement knowledge of solid-state components and devices such as a power supply design;

(F) demonstrate knowledge of the similarities and differences in optoelectronic devices;

(G) implement knowledge of transmission theory;

(H) implement knowledge of microprocessor applications;

(I) apply electronic theory to generators, electric motors, power supplies, electronic amplifiers, electronic oscillators, communication circuits, and systems; and

(J) complete advanced electrical-electronic troubleshooting assignments to industry standards.

(7) The student learns the function and application of the tools, equipment, and materials used in electronics through specific project-based assessments. The student is expected to:

(A) use tools and laboratory equipment in a safe manner to construct and repair circuits;

(B) use precision measuring instruments to analyze circuits and prototypes;

(C) describe and perform measurement techniques with analog, digital, or storage oscilloscopes;

(D) use multiple software applications to simulate circuit behavior and present concepts; and

(E) identify and describe the functions of computer hardware devices.

(8) The student designs products using appropriate design processes and techniques. The student is expected to:

(A) interpret advanced industry standard schematics;

(B) identify areas where quality, reliability, and safety can be designed into a product;

(C) improve a product design to meet a specified need;

(D) produce advanced schematics to industry standards;

(E) discuss the process of obtaining a patent;

(F) use a variety of technologies to design components such as computer simulation software; and

(G) explore innovative technologies that may affect electronics.

(9) The student builds a simulated or physical prototype using the appropriate tools, materials, and techniques. The student is expected to:

(A) identify and describe the steps needed to produce a prototype;

(B) identify and use appropriate tools, equipment, machines, and materials to produce the prototype; and

(C) present the prototype using a variety of media to a panel.

§127.394. Digital Electronics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Algebra I and Geometry. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Digital Electronics is the study of electronic circuits that are used to process and control digital signals. In contrast to analog electronics, where information is represented by a continuously varying voltage, digital signals are represented by two discreet voltages or logic levels. This distinction allows for greater signal speed and storage capabilities and has revolutionized the world of electronics. Digital electronics is the foundation of modern electronic devices such as cellular phones, digital audio players, laptop computers, digital cameras, and high-definition televisions. The primary focus of Digital Electronics is to expose students to the design process of combinational and sequential logic design, teamwork, communication methods, engineering standards, and technical documentation.

(4) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student demonstrates the skills necessary for success in a technical career. The student is expected to:

(A) distinguish the differences between an engineering technician, engineering technologist, and engineer;

(B) identify employment and career opportunities;

(C) identify industry certifications;

(D) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(E) identify and demonstrate respect for diversity in the workplace;

(F) identify and demonstrate appropriate actions and identify consequences relating to discrimination, harassment, and inequality;

(G) explore electronics engineering careers and preparation programs;

(H) explore career preparation learning experiences, including job shadowing, mentoring, and apprenticeship training; and

(I) discuss Accreditation Board for Engineering and Technology (ABET) accreditation and implications.

(3) The student participates in team projects in various roles. The student is expected to:

(A) explain the importance of teamwork in the field of electronics;

(B) apply principles of effective problem solving in teams to practice collaboration and conflict resolution; and

(C) demonstrate proper attitudes as a team leader and team member.

(4) The student develops skills for managing a project. The student is expected to:

(A) implement project management methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) develop a project schedule and complete work according to established criteria;

(C) participate in the organization and operation of a real or simulated engineering project; and

(D) develop a plan for production of an individual product.

(5) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) comply with safety guidelines as described in various manuals, instructions, and regulations;

(C) identify governmental and organizational regulations for health and safety in the workplace related to electronics;

(D) identify and classify hazardous materials and wastes according to Occupational Safety and Health Administration (OSHA) regulations;

(E) dispose of hazardous materials and wastes appropriately;

(F) perform maintenance on selected tools, equipment, and machines;

(G) handle and store tools and materials correctly; and

(H) describe the results of improper maintenance of material, tools, and equipment.

(6) The student explores the fundamentals of analog and digital electronics. The student uses appropriate notation and understands the logic of circuit design and logic gates. The student is expected to:

(A) use scientific notation, engineering notation, and Systems International (SI) notation to conveniently write very large or very small numbers frequently encountered when working with electronics;

(B) describe the process of soldering and how it is used in the assembly of electronic components;

(C) explain the different waveforms and distinctive characteristics of analog and digital signals;

(D) identify the voltage levels of analog and digital signals;

(E) determine whether a material is a conductor, an insulator, or a semiconductor based on its atomic structure;

(F) analyze the three fundamental concepts of voltage, current, and resistance;

(G) define circuit design software and explain its purpose;

(H) identify the fundamental building block of sequential logic;

(I) identify the components of a manufacturer's datasheet, including a logic gate's general description, connection diagram, and function table;

(J) categorize integrated circuits by their underlying circuitry, scale of integration, and packaging style;

(K) describe the advantages and disadvantages of the various sub-families of transistor-transistor logic (TTL) gates;

(L) explain that a logic gate is depicted by its schematic symbol, logic expression, and truth table;

(M) evaluate the different functions of input and output values of combinational and sequential logic;

(N) explain combinational logic designs implemented with AND gates, OR gates, and INVERTER gates; and

(O) identify the fundamental building block of sequential logic.

(7) The student understands and uses multiple forms of AND-OR-Invert (AOI) logic. The student is expected to:

(A) develop an understanding of the binary number system and its relationship to the decimal number system as an essential component in the combinational logic design process;

(B) translate a set of design specifications into a truth table to describe the behavior of a combinational logic design by listing all possible input combinations and the desired output for each;

(C) derive logic expressions from a given truth table;

(D) demonstrate logic expressions in sum-of-products (SOP) form and products-of-sum (POS) form;

(E) explain how all logic expressions, whether simplified or not, can be implemented using AND gates and INVERTER gates or OR gates and INVERTER gates; and

(F) apply a formal design process to translate a set of design specifications into a functional combinational logic circuit.

(8) The student understands, explains, and applies NAND and NOR Logic and understands the benefits of using universal gates. The student is expected to:

(A) apply the Karnaugh Mapping graphical technique to simplify logic expressions containing two, three, and four variables;

(B) define a "don't care" condition and explain its significance;

(C) explain why NAND and NOR gates are considered universal gates;

(D) demonstrate implementation of a combinational logic expression using only NAND gates or only NOR gates;

(E) discuss the formal design process used for translating a set of design specifications into a functional combinational logic circuit implemented with NAND or NOR gates; and

(F) explain why combinational logic designs implemented with NAND gates or NOR gates will typically require fewer integrated circuits (IC) than AOI equivalent implementations.

(9) The student understands combinational logic systems, including seven-segment displays, Exclusive OR and Exclusive NOR gates, and multiplexer/de-multiplexer pairs. The student understands the relative value of various logic approaches. The student is expected to:

(A) use seven-segment displays used to display the digits 0-9 as well as some alpha characters;

(B) identify the two varieties of seven-segment displays;

(C) describe the formal design process used for translating a set of design specifications into a functional combinational logic circuit;

(D) develop an understanding of the hexadecimal and octal number systems and their relationships to the decimal number system;

(E) explain the primary intended purpose of Exclusive OR (XOR) and Exclusive NOR (XNOR) gates;

(F) describe how to accomplish the addition of two binary numbers of any bit length;

(G) explain when multiplexer/de-multiplexer pairs are most frequently used;

(H) explain the purpose of using de-multiplexers in electronic displays that use multiple seven-segment displays;

(I) identify the most commonly used method for handling negative numbers in digital electronics;

(J) discuss the use of programmable logic devices and explain designs for which they are best suited; and

(K) compare and contrast circuits implemented with programmable logic devices with circuits implemented with discrete logic.

(10) The student understands and describes multiple types of sequential logic and various uses of sequential logic. The student is expected to:

(A) explain the capabilities of flip-flop and transparent latch logic devices;

(B) discuss synchronous and asynchronous inputs of flip-flops and transparent latches;

(C) explore the use of flip-flops, including designing single event detection circuits, data synchronizers, shift registers, and frequency dividers;

(D) explain how asynchronous counters are characterized and how they can be implemented;

(E) explore the use of the asynchronous counter method to implement up counters, down counters, and modulus counters;

(F) explain how synchronous counters are characterized and how they can be implemented;

(G) explore the use of the synchronous counter method to implement up counters, down counters, and modulus counters;

(H) describe a state machine;

(I) identify common everyday devices that machines are used to control such as elevator doors, traffic lights, and combinational or electronic locks; and

(J) discuss various ways state machines can be implemented.

(11) The student explores microcontrollers, specifically their usefulness in real-world applications. The student is expected to:

(A) demonstrate an understanding of the use of flowcharts as graphical organizers by technicians, computer programmers, engineers, and other professionals and the benefits of various flowcharting techniques;

(B) develop an understanding of basic programming skills, including variable declaration, loops, and debugging;

(C) identify everyday products that use microcontrollers such as robots, garage door openers, traffic lights, and home thermostats;

(D) describe a servo motor;

(E) explore the way microcontrollers sense and respond to outside stimuli;

(F) explain why digital devices are only relevant if they can interact with the real world;

(G) explain the importance of digital control devices, including microcontrollers in controlling mechanical systems; and

(H) demonstrate an understanding that realistic problem solving with a control system requires the ability to interface analog inputs and outputs with a digital device.

§127.395. Robotics I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Recommended prerequisite: Principles of Applied Engineering. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Robotics I, students will transfer academic skills to component designs in a project-based environment through implementation of the design process. Students will build prototypes or use simulation software to test their designs. Additionally, students will explore career opportunities, employer expectations, and educational needs in the robotic and automation industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates the skills necessary for success in a technical career. The student is expected to:

(A) distinguish the differences among an engineering technician, engineering technologist, and engineer;

(B) identify employment and career opportunities;

(C) identify industry certifications;

(D) discuss ethical issues related to engineering and technology and incorporate proper ethics in submitted projects;

(E) identify and demonstrate respect for diversity in the workplace;

(F) identify appropriate actions and consequences relating to discrimination, harassment, and inequality;

(G) explore robotic engineering careers and preparation programs;

(H) explore career preparation learning experiences, including job shadowing, mentoring, and apprenticeship training; and

(I) discuss Accreditation Board for Engineering and Technology (ABET) accreditation and implications.

(2) The student participates in team projects in various roles. The student is expected to:

(A) explain the importance of teamwork in the field of robotics;

(B) apply principles of effective problem solving in teams to collaboration and conflict resolution; and

(C) demonstrate proper attitudes as a team leader and team member.

(3) The student develops skills for managing a project. The student is expected to:

(A) implement project management methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) develop a project schedule and complete work according to established criteria;

(C) participate in the organization and operation of a real or simulated engineering project; and

(D) develop a plan for production of an individual product.

(4) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) comply with safety guidelines as described in various manuals, instructions, and regulations;

(C) identify governmental and organizational regulations for health and safety in the workplace related to electronics;

(D) identify and classify hazardous materials and wastes according to Occupational Safety and Health Administration (OSHA) regulations;

(E) dispose of hazardous materials and wastes appropriately;

(F) perform maintenance on selected tools, equipment, and machines;

(G) handle and store tools and materials correctly; and

(H) describe the results of improper maintenance of material, tools, and equipment.

(5) The student develops the ability to use and maintain technological products, processes, and systems. The student is expected to:

(A) demonstrate the use of computers to manipulate a robotic or automated system and associated subsystems;

(B) maintain systems to ensure safe and proper function and precision operation;

(C) describe feedback control loops used to provide information; and

(D) describe types and functions of sensors used in robotic systems.

(6) The student develops an understanding of engineering principles and fundamental physics. The student is expected to:

(A) demonstrate knowledge of Newton's Laws as applied to robotics such as rotational dynamics, torque, weight, friction, and traction factors required for the operation of robotic systems;

(B) demonstrate knowledge of motors, gears, gear ratios, and gear trains used in the robotic systems;

(C) describe the application of the six simple machines to robotics;

(D) describe the operation of direct current (DC) motors, including control, speed, and torque; and

(E) describe the operation of servo motors, including control, angle, and torque.

(7) The student develops an understanding of the characteristics and scope of manipulators, accumulators, and end effectors required for a robotic or automated system to function. The student is expected to:

(A) describe the relationship between robotic arm construction and robot stability;

(B) describe the relationship between torque and gear ratio to weight of payload in a robotic arm operation; and

(C) demonstrate knowledge of linkages and gearing in end effectors used in a robotic arm system.

(8) The student uses engineering design methodologies. The student is expected to:

(A) demonstrate an understanding of and discuss the design process;

(B) think critically, identify the system constraints, and make fact-based decisions;

(C) apply testing and reiteration strategies to develop or improve a product;

(D) apply decision-making strategies when developing solutions;

(E) identify quality-control issues in engineering design and production;

(F) describe perceptions of the quality of products and how they affect engineering decisions;

(G) use an engineering notebook to document the project design process as a legal document; and

(H) interpret industry standard system schematics.

(9) The student learns the function and application of the tools, equipment, and materials used in robotic and automated systems through specific project-based assessments. The student is expected to:

(A) use tools and laboratory equipment in a safe manner to construct and repair systems;

(B) use precision measuring instruments to analyze systems and prototypes; and

(C) use multiple software applications to simulate robot behavior and present concepts.

(10) The student produces a product using the appropriate tools, materials, and techniques. The student is expected to:

(A) identify and describe the steps needed to produce a prototype;

(B) identify and use appropriate tools, equipment, machines, and materials to produce the prototype;

(C) construct a robotic or automated system to perform specified operations using the design process;

(D) test and evaluate the design in relation to pre-established requirements such as criteria and constraints;

(E) refine the design of a robotic or automated system to ensure quality, efficiency, and manufacturability of the final product; and

(F) present the final product using a variety of media.

§127.396. Robotics II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Robotics I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Robotics II, students will explore artificial intelligence and programming in the robotic and automation industry. Through implementation of the design process, students will transfer academic skills to component designs in a project-based environment. Students will build prototypes and use software to test their designs.

(4) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations

and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student learns and contributes productively as an individual and as a member of a project team. The student is expected to:

(A) demonstrate an understanding of and discuss how teams function;

(B) apply teamwork to solve problems;

(C) follow directions and decisions of responsible individuals of the project team;

(D) participate in establishing team procedures and team norms; and

(E) work cooperatively with others to set and accomplish goals in both competitive and non-competitive situations.

(3) The student develops skills of project management. The student is expected to:

(A) implement project management methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project;

(B) develop a project schedule and complete work according to established criteria;

(C) participate in the organization and operation of a real or simulated engineering project; and

(D) translate and employ a Project Management Plan for production of a product.

(4) The student practices safe and proper work habits. The student is expected to:

(A) master relevant safety tests;

(B) comply with safety guidelines as described in various manuals, instructions, and regulations;

(C) identify and classify hazardous materials and wastes according to Occupational Safety and Health Administration (OSHA) regulations;

(D) dispose of hazardous materials and wastes appropriately;

(E) comply with established guidelines for working in a lab environment;

(F) handle and store tools and materials correctly;

(G) employ established inventory control and organization procedures; and

(H) describe the results of negligent or improper maintenance.

(5) The student develops the ability to use and maintain technological products, processes, and systems. The student is expected to:

(A) demonstrate the use of computers to manipulate a robotic or automated system and associated subsystems;

(B) troubleshoot and maintain systems and subsystems to ensure safe and proper function and precision operation;

(C) implement feedback control loops used to provide information; and

(D) implement different types of sensors used in robotic or automated systems and their operations.

(6) The student demonstrates an understanding of advanced mathematics and physics in robotic and automated systems. The student is expected to:

(A) apply the concepts of acceleration and velocity as they relate to robotic and automated systems;

(B) describe the term degrees of freedom and apply it to the design of joints used in robotic and automated systems;

(C) describe angular momentum and integrate it in the design of robotic joint motion, stability, and mobility;

(D) use the impulse-momentum theory in the design of robotic and automated systems;

(E) explain translational, rotational, and oscillatory motion in the design of robotic and automated systems;

(F) apply the operation of direct current (DC) motors, including control, speed, and torque;

(G) apply the operation of servo motors, including control, angle, and torque;

(H) interpret sensor feedback and calculate threshold values;

(I) apply measurement and geometry to calculate robot navigation;

(J) implement movement control using encoders; and

(K) implement path planning using geometry and multiple sensor feedback.

(7) The student creates a program to control a robotic or automated system. The student is expected to:

(A) use coding languages and proper syntax;

(B) use programming best practices for commenting and documentation;

(C) describe how and why logic is used to control the flow of the program;

(D) create a program flowchart and write the pseudocode for a program to perform an operation;

(E) create algorithms for evaluating a condition and performing an appropriate action using decisions;

(F) create algorithms that loop through a series of actions for a specified increment and for as long as a given condition exists;

(G) create algorithms that evaluate sensor data as variables to provide feedback control;

(H) use output commands and variables;

(I) use selection programming structures such as jumps, loops, switch, and case; and

(J) implement subroutines and functions.

(8) The student develops an understanding of the characteristics and scope of manipulators, accumulators, and end effectors required for a robotic or automated system to function. The student is expected to:

(A) demonstrate knowledge of robotic or automated system arm construction;

(B) demonstrate an understanding and apply the concepts of torque, gear ratio, stability, and weight of payload in a robotic or automated system arm operation; and

(C) demonstrate an understanding and apply the concepts of linkages and gearing in end effectors and their use in a robotic or an automated arm system.

(9) The student uses engineering design methodologies. The student is expected to:

(A) implement the design process;

(B) demonstrate critical thinking, identify the system constraints, and make fact-based decisions;

(C) apply formal testing and reiteration strategies to develop or improve a product;

(D) apply and defend decision-making strategies when developing solutions;

(E) identify and improve quality-control issues in engineering design and production;

(F) apply Six Sigma to analyze the quality of products and how it affects engineering decisions;

(G) use an engineering notebook to document the project design process as a legal document; and

(H) create and interpret industry standard system schematics.

(10) The student learns the function and application of the tools, equipment, and materials used in robotic and automated systems through specific project-based assessments. The student is expected to:

(A) use and maintain tools and laboratory equipment in a safe manner to construct and repair systems;

(B) use precision measuring instruments to analyze systems and prototypes;

(C) implement a system to identify and track all components of the robotic or automated system and all elements involved with the operation, construction, and manipulative functions; and

(D) use multiple software applications to simulate robot behavior and present concepts.

(11) The student produces a product using the appropriate tools, materials, and techniques. The student is expected to:

(A) use the design process to design a robotic or automated system that meets pre-established criteria and constraints;

(B) identify and use appropriate tools, equipment, machines, and materials to produce the prototype;

(C) implement sensors in the robotic or automated system;

(D) construct the robotic or automated system;

(E) use the design process to evaluate and formally test the design;

(F) refine the design of the robotic or automated system to ensure quality, efficiency, and manufacturability of the final robotic or automated system; and

(G) present the final product using a variety of media.

§127.397. Engineering Science (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Algebra I, one credit in biology, and at least one credit in a course from the science, technology, engineering, and mathematics career cluster. Recommended prerequisites: Geometry, Integrated Physics and Chemistry (IPC), one credit in chemistry, or one credit in physics. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Engineering Science is an engineering course designed to expose students to some of the major concepts and technologies that they will encounter in a postsecondary program of study in any engi-

neering domain. Students will have an opportunity to investigate engineering and high-tech careers. In Engineering Science, students will employ science, technology, engineering, and mathematical concepts in the solution of real-world challenge situations. Students will develop problem-solving skills and apply their knowledge of research and design to create solutions to various challenges. Students will also learn how to document their work and communicate their solutions to their peers and members of the professional community.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as dial caliper, micrometer, protractor, compass, scale rulers, multimeter, and circuit components;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using spreadsheets, engineering notebooks, graphs, and charts;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a STEM field.

(5) The student investigates engineering-related fields and career opportunities. The student is expected to:

(A) differentiate between engineering and engineering technology;

(B) compare the roles or job descriptions for career opportunities in the fields of pure science, engineering, and engineering technology;

(C) identify and differentiate between the different engineering disciplines; and

(D) demonstrate appropriate oral, written, and visual forms of technical communication.

(6) The student demonstrates an understanding of design problems and works individually and as a member of a team to solve design problems. The student is expected to:

(A) solve design problems individually and in a team;

(B) create solutions to existing problems using a design process;

(C) use a design brief to identify problem specifications and establish project constraints;

(D) use communication to achieve a desired goal within a team; and

(E) work as a member of a team to conduct research to develop a knowledge base, stimulate creative ideas, and make informed decisions.

(7) The student understands mechanisms, including simple and compound machines, and performs calculations related to mechanical advantage, drive ratios, work, and power. The student is expected to:

(A) explain the purpose and operation of components, including gears, sprockets, pulley systems, and simple machines;

(B) explain how components, including gears, sprockets, pulley systems, and simple machines, make up mechanisms;

(C) distinguish between the six simple machines and their attributes and components;

(D) measure forces and distances related to a mechanism;

(E) calculate work and power in mechanical systems;

(F) determine experimentally the efficiency of mechanical systems; and

(G) calculate mechanical advantage and drive ratios of mechanisms.

(8) The student understands energy sources, energy conversion, and circuits and performs calculations related to work and power. The student is expected to:

(A) identify and categorize energy sources as nonrenewable, renewable, or inexhaustible;

(B) define and calculate work and power in electrical systems;

(C) calculate and explain how power in a system converts energy from electrical to mechanical; and

(D) define voltage, current, and resistance and calculate each quantity in series, parallel, and combination electrical circuits using Ohm's law.

(9) The student understands system energy requirements and how energy sources can be combined to convert energy into useful forms. The student understands the relationships between material conductivity, resistance, and geometry in order to calculate energy transfer and determine power loss and efficiency. The student is expected to:

(A) explain the purpose of energy management;

(B) evaluate system energy requirements in order to select the proper energy source;

(C) explain and design how multiple energy sources can be combined to convert energy into useful forms;

(D) describe how hydrogen fuel cells create electricity and heat and how solar cells create electricity;

(E) measure and analyze how thermal energy is transferred via convection, conduction, and radiation;

(F) analyze how thermal energy transfer is affected by conduction, thermal resistance values, convection, and radiation; and

(G) calculate resistance, efficiency, and power transfer in power transmission and distribution applications for various material properties.

(10) The student understands the interaction of forces acting on a body and performs calculations related to structural design. The student is expected to:

(A) illustrate, calculate, and experimentally measure all forces acting upon a given body;

(B) locate the centroid of structural members mathematically or experimentally;

(C) calculate moment of inertia of structural members;

(D) define and calculate static equilibrium;

(E) differentiate between scalar and vector quantities;

(F) identify properties of a vector, including magnitude and direction;

(G) calculate the X and Y components given a vector;

(H) calculate moment forces given a specified axis;

(I) calculate unknown forces using equations of equilibrium; and

(J) calculate external and internal forces in a statically determinate truss using translational and rotational equilibrium equations.

(11) The student understands material properties and the importance of choosing appropriate materials for design. The student is expected to:

(A) conduct investigative non-destructive material property tests on selected common household products;

(B) calculate and measure the weight, volume, mass, density, and surface area of selected common household products; and

(C) identify the manufacturing processes used to create selected common household products.

(12) The student uses material testing to determine a product's function and performance. The student is expected to:

(A) use a design process and mathematical formulas to solve and document design problems;

(B) obtain measurements of material samples such as length, width, height, and mass;

(C) use material testing to determine a product's reliability, safety, and predictability in function;

(D) identify and calculate test sample material properties using a stress-strain curve; and

(E) identify and compare measurements and calculations of sample material properties such as elastic range, proportional limit, modulus of elasticity, elastic limit, resilience, yield point, plastic deformation, ultimate strength, failure, and ductility using stress-strain data points.

(13) The student understands that control systems are designed to provide consentient process control and reliability and uses computer software to create flowcharts and control system operating programs. The student is expected to:

(A) create detailed flowcharts using a computer software application;

(B) create control system operating programs using computer software;

(C) create system control programs that use flowchart logic;

(D) select appropriate input and output devices based on the need of a technological system; and

(E) judge between open- and closed-loop systems in order to select the most appropriate system for a given technological problem.

(14) The student demonstrates an understanding of fluid power systems and calculates values in a variety of systems. The student is expected to:

(A) identify and explain basic components and functions of fluid power devices;

(B) differentiate between pneumatic and hydraulic systems and between hydrodynamic and hydrostatic systems;

(C) use Pascal's Law to calculate values in a fluid power system;

(D) distinguish between gauge pressure and absolute pressure and between temperature and absolute temperature;

(E) calculate values in a pneumatic system using the ideal gas laws; and

(F) calculate and experiment with flow rate, flow velocity, and mechanical advantage in a hydraulic system model.

(15) The student demonstrates an understanding of statistics and applies the concepts to real-world engineering design problems. The student is expected to:

(A) calculate and test the theoretical probability that an event will occur;

(B) calculate the experimental frequency distribution of an event occurring;

(C) apply the Bernoulli process to events that only have two distinct possible outcomes;

(D) apply AND, OR, and NOT logic to solve complex probability scenarios;

(E) apply Bayes's theorem to calculate the probability of multiple events occurring;

(F) calculate the central tendencies of a data array, including mean, median, and mode;

(G) calculate data variations, including range, standard deviation, and variance; and

(H) create and explain a histogram to illustrate frequency distribution.

(16) The student demonstrates an understanding of kinematics in one and two dimensions and applies the concepts to real-world engineering design problems. The student is expected to:

(A) calculate distance, displacement, speed, velocity, and acceleration from data;

(B) calculate experimentally the acceleration due to gravity given data from a free-fall device;

(C) calculate the X and Y components of an object in projectile motion; and

(D) determine and test the angle needed to launch a projectile a specific range given the projectile's initial velocity.

§127.398. Engineering Mathematics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Algebra II. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, ma-

terials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Engineering Mathematics is a course where students solve and model design problems. Students will use a variety of mathematical methods and models to represent and analyze problems that represent a range of real-world engineering applications such as robotics, data acquisition, spatial applications, electrical measurement, manufacturing processes, materials engineering, mechanical drives, pneumatics, process control systems, quality control, and computer programming.

(4) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student uses mathematically based hydraulics concepts to measure and find pump output, understand pressure versus cylinder force, and understand flow rate verses cylinder speed. The student is expected to:

(A) explain how flow rate can be measured in gallons per minute and liters per minute;

(B) calculate and record data using actual flow rates from a flow meter chart;

(C) calculate, measure, and illustrate the force output and speed of an extending and retracting cylinder; and

(D) determine and depict the stroke time of a cylinder in gallons per minute.

(3) The student uses mathematical concepts of structure design to define and describe statics, acquire data, apply concepts of moments and bending stress, and apply concepts of truss design and analysis. The student is expected to:

(A) calculate a resultant force;

(B) apply the concept of equilibrium to force calculations;

(C) calculate a force using a free-body diagram;

(D) develop an application of strain gauges that determines mathematically and experimentally the force on a structural element;

(E) calculate the magnitude of force applied to a rotational system;

(F) apply the moment equilibrium equation to force calculations;

(G) calculate, measure, and illustrate a bending moment on a beam;

(H) determine and depict the bending stress in a beam;

(I) calculate forces in truss using a six-step problem-solving method;

(J) apply modulus of elasticity to the deflection of beams;

(K) calculate a beam deflection for a given load;

(L) determine and depict the critical load for buckling using Euler's formula; and

(M) design and apply factors of safety to column and beam design.

(4) The student understands the role of trigonometry in spatial applications. The student is expected to:

(A) apply trigonometric ratios, including sine, cosine, and tangent, to spatial problems; and

(B) determine the distance and height of remote objects using trigonometry.

(5) The student understands the concepts of design processes with multi-view computer-aided drafting and design drawings for facilities layouts, precision part design, process design, injection mold design, and computer-aided manufacturing, as applied to processes using 3D printing, laser cutting, and computer numerical control. The student is expected to:

(A) determine a dimension of an object given a scaled drawing having no dimensions;

(B) compare and contrast the function of production time and production rate;

(C) calculate and apply the proper cycle time and analyze machines required to meet a specified production rate;

(D) demonstrate the calculation and application of output shaft speed and torque in a gear train;

(E) create a method to determine the direction of a gear train's output shaft;

(F) design a spur gear train given speed and torque requirements;

(G) calculate and apply the proper spacing between the centers of gears in a gear train to a specified tolerance;

(H) apply positional tolerances to assembled parts;

(I) predict the production cost of a product given process information and a bill of materials;

(J) apply the correct spindle speed for a computer-aided manufacturing device by calculation;

(K) apply the correct feed rate for a computer-aided manufacturing device by using calculation;

(L) calculate the pressure drop in an injection mold system;

(M) design a gate size in an injection mold system using the gate width and depth formulas;

(N) determine the size of a mold; and

(O) create size runners for a multi-cavity mold.

(6) The student calculates electronic quantities and uses electrical measuring instruments to experimentally test their calculations. The student is expected to:

(A) apply common electronic formulas to solve problems;

(B) use engineering notation to properly describe calculated and measured values;

(C) compare and contrast the mathematical differences between a direct current and alternating current;

(D) show the effect and give an application of an inductor in an alternating current circuit;

(E) show the effect and give an application of a capacitor in an alternating current circuit;

(F) create a resistive capacitive timing circuit in a time-delay circuit;

(G) calculate the output voltage and current load of a transformer;

(H) calculate the effective alternating current voltage root mean square given the peak alternating current voltage and the peak alternating current voltage given the root mean square value; and

(I) calculate the cost of operating an electric motor.

(7) The student applies mathematical principles of pneumatic pressure and flow to explain pressure versus cylinder force, apply and manipulate pneumatic speed control circuits, and describe maintenance of pneumatic equipment, centrifugal pump operation and characteristics, data acquisition systems, pump power, and pump system design. The student is expected to:

(A) calculate the force output of a cylinder in retraction and extension;

(B) explain how gage pressure and absolute pressure are different;

(C) explain the individual gas laws and use the ideal gas law to solve problems;

(D) convert air volumes at pressures to free air volumes;

(E) compare dew point and relative humidity to explain their importance;

(F) explain the importance of the two units of pump flow rate measurement;

(G) convert between mass and volumetric flow rate;

(H) differentiate between unit analysis such as converting units of pressure between English and SI units and dimensional analysis such as Force and Pressure;

(I) convert between units of head and pressure;

(J) explain the importance of total dynamic head in terms of suction and discharge head;

(K) demonstrate the measurement of the total head of a centrifugal pump;

(L) calculate Reynolds number and determine the type of fluid flow in a pipe, including laminar flow, transitional flow, and turbulent flow;

(M) calculate friction head loss in a given pipe length using head loss tables or charts;

(N) calculate total suction lift, total suction head, total discharge head, and the total dynamic head of a system for a given flow rate;

(O) calculate hydraulic power;

(P) calculate centrifugal pump brake horsepower given pump efficiency and hydraulic power;

(Q) calculate the effect of impeller diameter and speed on the flow rate of a centrifugal pump and pump head;

(R) predict the effect of impeller diameter on a pump head capacity curve; and

(S) calculate net positive suction head.

(8) The student applies mathematical principles of material engineering, including tensile strength analysis, data acquisition systems, compression testing and analysis, shear and hardness testing and analysis, and design evaluation. The student is expected to:

(A) calculate stress, strain, and elongation using the modulus of elasticity for a material or model with a given set of data;

(B) analyze and explain the importance of sensitivity in relation to material engineering;

(C) analyze the operation of a data-acquisition application or program;

(D) mathematically analyze a part for stress and strain under a compression load;

(E) calculate shear stress for a material with a given set of data;

(F) use the Brinell hardness number to determine the ultimate tensile strength of a material;

(G) apply factors of safety to material engineering designs; and

(H) create material testing conditions for a model using equipment such as a polariscope.

(9) The student applies mathematical principles for mechanical drives, including levers, linkages, cams, turnbuckles, pulley systems, gear drives, key fasteners, v-belt drives, and chain drives. The student is expected to:

(A) calculate the weight of an object for a given mass;

(B) analyze and calculate torque for a given application using the proper units of measurement;

(C) calculate the magnitude of force applied to a rotational system;

(D) calculate the mechanical advantage of first-, second-, and third-class levers;

(E) compare the advantages and disadvantages of the three classes of levers for different applications;

(F) calculate and analyze the coefficient of friction in its proper units of measurement;

(G) analyze and calculate mechanical advantage for simple machines using proper units of measurement;

(H) calculate the mechanical advantage of gear drive systems;

(I) compare and contrast at least two methods of loading a mechanical drive system;

(J) calculate rotary mechanical power applied to an application;

(K) analyze the mechanical efficiency of a given application;

(L) demonstrate various examples of pitch and analyze its proper application;

(M) calculate the shaft speed and torque of a belt drive and chain drive system; and

(N) calculate sprocket ratio and analyze its importance to various applications.

(10) The student applies mathematical principles of quality assurance, including using precision measurement tools, statistical process control, control chart operation, analysis of quality assurance control charts, geometric dimensioning and tolerancing, and location, orientation, and form tolerances. The student is expected to:

(A) evaluate the readings of dial calipers and micrometers to make precise measurements;

(B) use at least three measures of central tendency to analyze the quality of a product;

(C) use a manually constructed histogram to analyze a given set of data;

(D) construct and use a mean-value-and-range chart to determine if a process remains constant over a specified range of time;

(E) examine the maximum and minimum limits of a dimension given its tolerance; and

(F) use position tolerance to calculate the location of a hole.

§127.399. Introduction to Computer-Aided Design and Drafting (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended Prerequisite: Principles of Applied Engineering, Principles of Architecture and Design, or Principles of Manufacturing. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Introduction to Computer-Aided Design and Drafting (CADD) allows students to acquire knowledge and skills needed to use design software, including an introduction to CADD equipment and software selection and interfaces. Students gain skills in setting up a CADD workstation; upgrading a computer to run advanced CADD software; working with storage devices; storing, retrieving, backing-up, and sharing databases, file servers, and local area networks (LANs); and transferring drawing files over the internet.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates knowledge of the CADD software. The student is expected to:

(A) describe computer-aided design, drafting, and CADD applications;

(B) demonstrate how to start and exit CADD software without corrupting files;

(C) use draw files;

(D) save, close, and open saved files;

(E) determine and specify drawing units and limits;

(F) describe and use the Cartesian coordinate system;

(G) use drawing snap and grid functions; and

(H) demonstrate the use of dynamic input and the command line.

(2) The student demonstrates the use of CADD tools for basic drawing and plotting. The student is expected to:

(A) draw objects using the line tool;

(B) draw circles, arcs, ellipses, and elliptical arcs;

(C) draw polylines, rectangles, donuts, and filled circles;

(D) draw true spline curves;

(E) create drawing templates;

(F) describe basic line conventions;

(G) create and manage layers;

(H) draw objects on separate layers;

(I) print and plot drawings;

(J) demonstrate organizational skills to influence the sequential process when creating drawings;

(K) construct geometric figures of lines, splines, circles, and arcs;

(L) create and edit text using appropriate style and size to annotate drawings;

(M) use control accuracy enhancement tools for entity positioning methods such as snap and xyz;

(N) use editing commands;

(O) use viewing commands to perform zooming and panning;

(P) plot drawings on media using layout and scale;

(Q) use query commands to interrogate database for entity characteristics, distance, area, and status;

(R) move, stretch, and offset objects;

(S) create a radius between objects;

(T) trim and extend objects;

(U) break and join objects;

(V) change object properties; and

(W) create hatching and manipulate properties such as calculating the area of an enclosed shape.

(3) The student demonstrates the use of CADD tools display and viewpoints. The student is expected to:

(A) create multiple viewpoints in the drawing window;

(B) select appropriate object snaps for various drawing tasks;

(C) create orthographic drawings;

(D) analyze challenges and identify solutions for design problems;

(E) investigate the use of space, scale, and environmental features to create three-dimensional form or the illusion of depth and form;

(F) prepare multi-view scaled drawings;

(G) select proper drawing scale, views, and layout;

(H) create drawings containing horizontal and vertical surfaces;

(I) create drawings containing circles and arcs;

(J) create removed details and conventional breaks using sectional drawing techniques;

(K) create assembly drawings;

(L) create detail drawings; and

(M) create technical drawings and title blocks associated with the different CAD drawings.

(4) The student demonstrates the use of software tools to properly create text within a CADD drawing. The student is expected to:

(A) use proper text standards for technical drawings;

(B) calculate drawing scale and text height using a scale ratio;

(C) apply text styles to enhance readability of drawings;

(D) demonstrate the use of tools to create multi-line text objects and single-line text;

(E) edit existing text; and

(F) create, insert, and modify tables.

(5) The student demonstrates the use of CADD editing tools within drawings. The student is expected to:

(A) draw chamfers and fillets;

(B) use editing tools to modify existing drawings;

(C) edit polylines and splines;

(D) move and copy objects;

(E) create mirror images and align objects; and

(F) scale and array objects.

(6) The student demonstrates the use of grips in drawings. The student is expected to:

(A) apply grips to stretch, move, rotate, scale, mirror, and copy objects;

(B) demonstrate the use of Quick Properties and the Properties palette to access CADD tools; and

(C) create selections by using the Quick Select dialog box.

(7) The student demonstrates the use of scale and dimension standards and practices. The student is expected to:

(A) apply standard dimensioning rules;

(B) draw scales and dimensions;

(C) create, edit, and manage dimension styles;

(D) add linear and angular dimensions to a drawing;

(E) draw datum and chain dimensions;

(F) dimension circles and arcs;

(G) control the appearance of existing dimensions and dimension text; and

(H) change dimension line spacing and alignment.

(8) The student creates and demonstrates standard blocks using tool palettes. The student is expected to:

(A) create and save text information blocks;

(B) insert blocks into a drawing;

(C) edit and update a block in a drawing;

(D) create blocks as a drawing file;

(E) construct and use a symbol library of blocks; and

(F) purge unused items from a drawing.

(9) The student prepares surface developments. The student is expected to:

(A) prepare developments of prisms, cylinders, cones, and pyramids;

(B) prepare developments of a transition piece; and

(C) prepare drawings involving intersecting pieces.

(10) The student designs and prepares basic architectural drawings. The student is expected to:

(A) solve design problems to gain new perspectives;

(B) apply critical-thinking and problem-solving skills to develop creative solutions for design problems;

(C) draw a site plan;

(D) draw a floor plan;

(E) draw interior and exterior elevations;

(F) draw a roof plan;

(G) prepare door and window schedules;

(H) draw wall sections;

(I) draw a plot plan; and

(J) draw an electrical and reflected ceiling plan.

(11) The student designs and prepares a technical drawing. The student is expected to:

(A) draw individual parts;

(B) draw the closed assembly drawings per the parts; and

(C) draw and explode the assembly with the parts list.

§127.400. Intermediate Computer-Aided Design and Drafting (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Architectural Design I, Introduction to Computer-Aided Design and Drafting, or Engineering Design and Presentation. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Intermediate Computer-Aided Design and Drafting (CADD), students develop practices and techniques used in computer-aided drafting, emphasizing the development and use of prototype drawings, construction of pictorial drawings, construction of three-dimensional drawings, interfacing two-dimensional and three-dimensional environments, and extracting data. Basic rendering techniques will also be developed. Emphasis is placed on drawing set-up; creating and modifying geometry; storing and retrieving predefined shapes; placing, rotating, and scaling objects; adding text and dimensions; using layers and coordinating systems, as well as using input and output devices.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates an understanding of CADD terminology, tools, and symbols. The student is expected to:

(A) apply the Cartesian Coordinate Systems to illustrate the application of Z coordinates;

(B) describe the CADD menu structure;

(C) differentiate between type-in commands, icons, and pulldown menus;

(D) manipulate the standard draw commands;

(E) demonstrate modifying commands;

(F) explain the various modes of viewing drawings; and

(G) define and modify dimension styles.

(2) The student produces hand sketches to organize ideas and communicate design ideas. The student is expected to:

(A) demonstrate the use of graphic descriptions;

(B) develop skill in sketching or mark making to plan, execute, and construct two-dimensional images and three-dimensional models;

(C) demonstrate methods of projection; and

(D) use proper drafting techniques to convert sketches into an electronic drawing using CADD.

(3) The student demonstrates an understanding of commands in a CADD system. The student is expected to:

(A) operate CADD software;

(B) demonstrate draw commands;

(C) modify drawn objects in CADD software;

(D) create two-dimensional and three-dimensional objects;

(E) convert two-dimensional drawings to three-dimensional drawings;

(F) convert three-dimensional drawings to two-dimensional drawings;

(G) prepare text blocks in CADD software;

(H) manipulate an external reference or file;

(I) import files of different formats into CADD;

(J) demonstrate the plot command in print or plot drawings; and

(K) import and export data using attributes.

(4) The student preforms computer-aided drafting functions. The student is expected to:

(A) create text styles, text justification, and multi-line text;

(B) create and use multi-leaders;

(C) edit dimensions;

(D) work with dimension styles;

(E) crosshatch objects;

(F) isolate and hide objects;

(G) use selection set methods;

(H) use rectangular, polar, and path arrays;

(I) use rotation reference angles;

(J) use elements of creativity and organizational principles to create visually coherent viewports and layouts;

(K) create and manage layers and properties;

(L) use page setup for plotting;

(M) create, insert, and edit reusable content such as symbols and blocks;

(N) use specific line types using the Standard Alphabet of Lines;

(O) create fills and gradients; and

(P) edit hatch patterns and fills.

(5) The student creates drawings using the CADD software. The student is expected to:

(A) translate hand sketches into CADD software;

(B) create projected mechanical drawings;

(C) create drawings with external references;

(D) complete a three-dimensional parametric model;

(E) organize a complex assembly, including an animated exploded assembly;

(F) compare various methods of drawing solids;

(G) construct a composite drawing using multiple drawings;

(H) justify correct drawing methods;

(I) draw lines, arcs, and circles to represent plans or mechanical assemblies;

(J) create text styles, text justification, and multi-line text;

(K) create and use multi-leaders;

(L) edit dimensions, including dimension styles;

(M) isolate and hide objects;

(N) use selection set methods;

(O) use elements of creativity and organizational principles to create visually coherent viewports and layouts;

(P) create and manage layers;

(Q) use page setup for plotting; and

(R) prepare multi-view drawings, including sectional and auxiliary views.

(6) The student creates electrical drawings. The student is expected to:

(A) prepare schematic drawings;

(B) prepare printed circuit board assembly drawing packages;

(C) prepare connection drawings;

(D) prepare interconnection drawings;

(E) prepare wiring drawings;

(F) prepare cable drawings and/or harness drawings;

(G) prepare component drawings; and

(H) prepare logic diagrams.

(7) The student creates mechanical drawings. The student is expected to:

(A) prepare fastener, cam, gear, spring, and bearing drawings;

(B) prepare detail drawings;

(C) prepare surface developments;

(D) prepare welding drawings;

(E) prepare bearing drawings;

(F) prepare casting drawings;

(G) prepare forging drawings;

(H) prepare tool drawings;

(I) prepare molding diagrams;

(J) prepare stamping drawings;

(K) prepare numerical-control drawings;

(L) modify drawings to include material specifications and parts list; and

(M) identify geometric tolerances and dimensioning of specific machined surfaces.

(8) The student prepares CADD project designs. The student is expected to:

(A) develop a floor plan depicting all elements of the building, including BIM (building information modeling);

(B) render a site plan that depicts all elements of the site;

(C) render exterior and interior elevations;

(D) draw a specified roof type within a plan;

(E) prepare door and window schedules;

(F) draw a wall and building section;

(G) draw an overall site plan;

(H) draw a building plot plan;

(I) review and revise plans throughout the design process to refine and achieve design objective;

(J) demonstrate flexibility and adaptability throughout the design process; and

(K) define a basic project materials list.

§127.401. Physics For Engineering (One Credit), Adopted 2024.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: one credit of Algebra I and one credit of Chemistry, Physics, or Integrated Physics and Chemistry. Students must meet the 40% laboratory and fieldwork requirement. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Physics for Engineering, students conduct laboratory and field investigations, use scientific and engineering practices during investigations, and make informed decisions using critical thinking and scientific problem solving. Various systems are described in terms of space, time, energy, and matter. Students study topics, including laws of motion, conservation of energy, momentum, electricity, magnetism, thermodynamics, and characteristics and behavior of waves. Students apply physics concepts and perform laboratory experimentations for at least 40% of instructional time using safe practices.

(4) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

(5) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Science and social ethics. Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide tools for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, other organizations that foster leadership and career development in the profession such as student chapters of related professional associations, or practical, hands-on activities or experiences through which a learner interacts with industry professionals in a workplace, which may be an in-person, virtual, or simulated setting. Learners prepare for employment or advancement along a career pathway by completing purposeful tasks that develop academic, technical, and employability skills.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as ammeters, balances, ballistic carts or equivalent, batteries, calipers, Celsius thermometers, consumable chemicals, collision apparatus, computers and modeling software, constant velocity cars, data acquisition probes and software, discharge tubes with power supply (H, He, Ne, Ar), dynamics and force demonstration equipment, electroscopes, electrostatic generators, electrostatic kits, friction blocks, graphing technology, hand-held visual spectroscopes, hot plates, iron filings, laser pointers, light bulbs, macrometers, magnets, magnetic compasses, mass sets, metric rulers, meter sticks, models and diagrams, motion detectors, multimeters, optics bench, optics kit, optic lenses, pendulums, photogates, plane mirrors, polarized film, prisms, protractors, resistors, ripple tank with wave generators, rope or string, scientific calculators, simple machines, slinky springs, springs, spring scales, standard laboratory glassware, stopwatches, switches, tuning forks, timing devices, trajectory apparatus, voltmeters, wave motion ropes, wires, or other equipment and materials that will produce the same results;

(E) collect quantitative data using the International System of Units (SI) and qualitative data as evidence;

(F) organize quantitative and qualitative data using notebooks or engineering journals, bar charts, line graphs, scatter plots, data tables, equations, conceptual mathematical relationships, labeled drawings and diagrams, or graphic organizers such as Venn diagrams;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) assess and optimize experimental processes and engineering designs.

(3) Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) Scientific and engineering practices. The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field in order to investigate STEM careers.

(5) The student thinks critically and creatively to devise a system or process in applying fundamental engineering solutions needed for a project to meet desired needs and specifications within constraints. The student is expected to:

(A) identify an engineering need through collaborative conversation or research;

(B) develop a proposal to execute an engineering solution that includes performance metrics and constraints such as economics, resources, or safety;

(C) analyze an implemented engineering solution and suggest changes to improve the engineering design or process; and

(D) assess the risks or trade-offs and benefits of a design solution such as accessibility, aesthetics, codes, cost, functionality, ethical considerations, or sustainability.

(6) The student uses the scientific and engineering practices to investigate physical concepts and phenomena. The student is expected to:

(A) develop and test hypotheses that can be supported by observational evidence;

(B) compare scientific concepts such as particle or wave behavior or the law of thermodynamics to describe physical phenomena;

(C) design procedures to conduct an investigation;

(D) perform accurate measurement techniques using precision instruments and proper techniques;

(E) identify and quantify causes and effects of uncertainties in measured data;

(F) analyze and interpret data using equations, tables, charts, and graphs to reveal potential patterns, trends, and sources of error; and

(G) communicate conclusions supported through various methods such as laboratory reports, labeled drawings, graphic organizers, journals, summaries, oral reports, or technology-based reports.

(7) The student demonstrates appropriate safety techniques in field and laboratory environments. The student is expected to:

(A) locate and apply safety guidelines as described in various manuals, instructions, or regulations; and

(B) identify hazardous materials and properly dispose of wastes.

(8) The student describes and applies the laws governing motion in a variety of situations. The student is expected to:

(A) generate and interpret relevant equations for one-dimensional motion using graphs and charts;

(B) define scalar and vector quantities;

(C) calculate displacement, distance, speed, velocity, average velocity, frames of reference, acceleration, and average acceleration using one-dimensional equations;

(D) calculate displacement, velocity, average velocity, acceleration, and average acceleration within a frame of reference using graphical vector addition;

(E) use graphs and charts to generate and interpret relevant equations for two-dimensional motion;

(F) explain projectile and circular motion using two-dimensional equations or vectors and apply the concepts to an investigation such as testing a catapult or carousel;

(G) explain Newton's first law of motion and apply the concepts of equilibrium and inertia to investigations using relevant real-world examples such as rockets, satellites, and automobile safety devices;

(H) conduct investigations that include calculations and free body diagrams to observe the effect of forces on objects, including tension, friction, normal force, gravity, centripetal force, and applied force, using the relationship between force, mass, and acceleration as represented by Newton's second law of motion;

(I) conduct or design investigations such as those that involve rockets, tug-of-war, or balloon cars to illustrate and analyze the simultaneous forces between two objects as represented in Newton's third law of motion using free body diagrams;

(J) design a model based on Newton's law of universal gravitation between two or more objects to determine the relationships between force, their masses, and the distance between their centers;

(K) design, evaluate, and refine a device that uses the concepts of impulse and conservation of momentum to minimize the net force on objects during collisions such as those that occur during vehicular accidents or sports activities or when a personal electronic device is dropped; and

(L) describe and calculate the mechanical energy of the power generated within, the impulse applied to, and the momentum of a physical system.

(9) The student describes the nature of forces in the physical world. The student is expected to:

(A) use Coulomb's law to predict how the magnitude of the electric force between two objects depends on their charges and the distance between their centers;

(B) build models such as generators, motors, and transformers that show how electric, magnetic, and electromagnetic forces and fields work in everyday life;

(C) test a variety of materials to determine conductive or insulative properties based on their electric properties;

(D) design, evaluate, and refine series and parallel circuits using schematics, digital resources, or materials such as switches, wires, resistors, lightbulbs, batteries, multimeters, voltmeters, and ammeters; and

(E) construct series and parallel circuits and use Ohm's Law to calculate current, potential difference, resistance, and power of various real-world series and parallel circuits such as models of in-home wiring, automobile wiring, and simple electrical devices.

(10) The student describes and applies the laws of the conservation of energy. The student is expected to:

(A) describe the transformations among work, potential energy, and kinetic energy using the work-energy theorem;

(B) calculate work, power, kinetic energy, and potential energy;

(C) identify, describe, and give real-world examples of simple machines such as levers, pulleys, wheels axles, wedges, screws, and inclined planes;

(D) calculate the mechanical advantage of simple machines; and

(E) apply the laws of conservation of energy to a physical system using simple machines such as a Rube Goldberg machine.

(11) The student analyzes the concept of thermal energy. The student is expected to:

(A) explain the laws of thermodynamics and how they relate to systems such as engines, heat pumps, refrigeration, solar, and heating and air conditioning;

(B) investigate and demonstrate the movement of thermal energy through various states of matter by convection, conduction, and radiation through environmental and man-made systems; and

(C) design, construct, and test a device or system that either minimizes or maximizes thermal energy consumption and perform a cost-benefit analysis such as comparing materials and energy sources that are renewable and nonrenewable.

(12) The student analyzes the properties of wave motion and optics. The student is expected to:

(A) examine and describe oscillatory motion using pendulums and wave propagation in various types of media;

(B) investigate and analyze characteristics of waves, including period, velocity, frequency, amplitude, and wavelength;

(C) investigate and calculate the relationship between wave speed, frequency, and wavelength;

(D) compare the characteristics and behaviors of transverse waves and longitudinal waves, including electromagnetic waves and sound waves;

(E) describe how the differences in wavelength and frequency within the electromagnetic spectrum impact real-world technologies such as radio, x-rays, and microwaves;

(F) investigate and explain behaviors of waves, including reflection, refraction, diffraction, interference, resonance, polarization, and the Doppler effect; and

(G) describe and predict image formation as a consequence of reflection from a plane mirror and refraction through a thin convex lens.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER J. HEALTH SCIENCE

19 TAC §§127.461, 127.462, 127.474 - 127.493, 127.553 - 127.555

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.461. Principles of Health Science (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) The Principles of Health Science course is designed to provide an overview of the therapeutic, diagnostic, health informatics, support services, and biotechnology research and development systems of the health care industry.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in health science. The student is expected to:

(A) convert units between systems of measurement;

(B) apply data from tables, charts, and graphs to provide solutions to health-related problems;

(C) interpret technical material related to the health science industry;

(D) organize, compile, and write ideas into reports and summaries;

(E) plan and prepare effective oral presentations;

(F) formulate responses using precise language to communicate ideas;

(G) describe biological and chemical processes that maintain homeostasis;

(H) identify and analyze principles of body mechanics and movement such as forces and the effects of movement, torque, tension, and elasticity on the human body;

(I) identify human needs according to Maslow's Hierarchy of Human Needs;

(J) describe the stages of development related to the life span;

(K) identify the concepts of health and wellness throughout the life span;

(L) analyze and evaluate communication skills for maintaining healthy relationships throughout the life span;

(M) research the historical significance of health care;

(N) describe the impact of health services on the economy;

(O) analyze the impact of local, state, and national government on the health science industry;

(P) identify diverse and cultural influences that have impacted contemporary aspects of health care delivery; and

(Q) research and compare practices used by various cultures and societies to solve problems related to health.

(2) The student uses verbal and nonverbal communication skills. The student is expected to:

(A) identify components of effective and non-effective communication;

(B) demonstrate effective communication skills for responding to the needs of individuals in a diverse society;

(C) evaluate the effectiveness of conflict-resolution techniques in various situations; and

(D) accurately interpret, transcribe, and communicate medical vocabulary using appropriate technology.

(3) The student implements the leadership skills necessary to function in a democratic society. The student is expected to:

(A) identify traits of a leader;

(B) demonstrate leadership skills, characteristics, and responsibilities of leaders such as goal-setting and team building; and

(C) demonstrate the ability to effectively conduct and participate in meetings.

(4) The student assesses career options and the preparation necessary for employment in the health science industry. The student is expected to:

(A) locate, evaluate, and interpret career options and employment information; and

(B) recognize the impact of career decisions, including the causes and effects of changing employment situations.

(5) The student identifies academic preparation and skills necessary for employment as defined by the health science industry. The student is expected to identify academic requirements for professional advancement such as certification, licensure, registration, continuing education, and advanced degrees.

(6) The student identifies the career pathways related to health science. The student is expected to:

(A) compare health science careers within the diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems; and

(B) identify the collaborative role of team members between systems to deliver quality health care.

(7) The student examines the role of the multidisciplinary team in providing health care. The student is expected to:

(A) explain the concept of teaming to provide quality health care; and

(B) examine the role of professional organizations in the preparation and governance of credentialing and certification.

(8) The student interprets ethical behavior standards and legal responsibilities. The student is expected to:

(A) compare published professional codes of ethics and scope of practice;

(B) explain principles of ethical behavior and confidentiality, including the consequences of breach of confidentiality;

(C) discuss ethical issues related to health care, including implications of technological advances;

(D) examine issues related to malpractice, negligence, and liability; and

(E) research laws governing the health science industry.

(9) The student recognizes the rights and choices of the individual. The student is expected to:

(A) identify situations related to autonomy;

(B) identify wellness strategies for the prevention of disease;

(C) evaluate positive and negative effects of relationships on physical and emotional health such as peers, family, and friends in promoting a healthy community;

(D) review documentation related to rights and choices; and

(E) demonstrate an understanding of diversity and cultural practices influencing contemporary aspects of health care.

(10) The student recognizes the importance of maintaining a safe environment and eliminating hazardous situations. The student is expected to:

(A) identify governing regulatory agencies such as the World Health Organization, Centers for Disease Control and Prevention, Occupational Safety and Health Administration, U.S. Food and Drug Administration, Joint Commission, and National Institute of Health;

(B) identify industry safety standards such as standard precautions, fire prevention and safety practices, and appropriate actions to emergency situations; and

(C) relate safety practices in the health science industry.

(11) The student identifies the technology used in the diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems. The student is expected to:

(A) research and identify technological equipment used in the diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems;

(B) identify potential malfunctions of technological equipment; and

(C) recognize and explain the process for reporting equipment or technology malfunctions.

§127.462. Principles of Bioscience (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) Principles of Bioscience provides an overview of biotechnology, bioengineering, and related fields. Topics related to genetics, proteins, and nucleic acids reinforce the applications of Biology content. Students will further study the increasingly important agricultural, environmental, economic, and political roles of bioenergy and biological remediation; the roles of nanoscience and nanotechnology in biotechnology medical research; and future trends in biological science and biotechnology.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores biotechnology career opportunities. The student is expected to:

(A) determine interests in the field of biotechnology through explorations such as career assessments, interactions with biotechnology professionals, media, and literature;

(B) identify career options in the field of biotechnology;

(C) identify reliable sources of career information;

(D) research and communicate interests, knowledge, educational level, abilities, and skills needed in a biotechnology-related occupation;

(E) identify conventional and non-conventional career opportunities that match interests and aptitudes;

(F) research applications of biotechnology in medicine, the environment, and settings such as pharmaceutical, agricultural, and industrial;

(G) use technology to research biotechnology topics, including identifying and selecting appropriate scholarly references; and

(H) analyze and discuss professional publications such as academic and peer-reviewed journals and technical reports.

(2) The student evaluates ethical and legal issues in biotechnology. The student is expected to:

(A) identify current ethical and legal issues;

(B) describe the history of biotechnology and related ethical and legal issues;

(C) discuss legal and technology issues for at least two biotechnology-related areas; and

(D) analyze examples of biotechnology views supported by objective and subjective sources such as scientific data, economic data, and sociocultural contexts.

(3) The student examines federal, state, local, and industry regulations as applied to biotechnological processes through researching credible sources. The student is expected to:

(A) identify local, state, and federal agencies responsible for regulating the biotechnology industry such as the U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the U.S. Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC);

(B) identify professional organizations participating in the development of biotechnology policies;

(C) identify and define terms related to biotechnology regulations such as Good Laboratory Practices (GLP), Good Manufacturing Practices (GMP), and Globally Harmonized System (GHS); and

(D) outline the methods and procedures used in biotechnology laboratories to follow local, state, and federal regulations such as those in the agricultural and health areas.

(4) The student demonstrates knowledge of the business climate for biotechnology industry sectors in the current market. The student is expected to:

(A) identify professional publications;

(B) identify the various biotechnology industry sectors;

(C) investigate and report on career opportunities in the biotechnology industry sectors; and

(D) identify professional organizations such as those at the local, state, and national levels.

(5) The student researches and exhibits employability skills that support a career in the biotechnology industry. The student is expected to:

(A) demonstrate verbal, non-verbal, written, and electronic communication skills;

(B) demonstrate skills used to secure and maintain employment;

(C) demonstrate appropriate workplace etiquette;

(D) display productive work habits and attitudes; and

(E) identify appropriate safety equipment and practices as outlined in Texas Education Agency-approved and industry-approved safety standards such as the use of personal protective equipment (PPE) and safety data sheets (SDS).

(6) The student investigates how biotechnology impacts the origins of waste and resource recovery. The student is expected to:

(A) identify biotechnology manufacturing processes and their end products, including waste and marketable products;

(B) explore the impacts of waste on biotic and abiotic factors in the environment such as effects on biological life cycles and pollution from nonbiodegradable single-use materials and microplastics;

(C) analyze the results of manufacturing refuse;

(D) explain the negative impacts of waste with respect to the individual, society, and the global population;

(E) investigate solutions to waste through bioremediation; and

(F) investigate evidence supporting waste management through regulations, public policy, and technology development.

(7) The student examines the relationship of biotechnology to the development of commercial products. The student is expected to:

(A) identify applications of agricultural biotechnology such as selective breeding of livestock and plants, aquaculture, horticultural products, and genetically modified organisms;

(B) identify applications of industrial biotechnology such as fermented food and beverages, genetically engineered proteins for industry, biocatalysts, bio polymers, biosensors, bioremediation, and biofuels;

(C) identify applications of medical and pharmaceutical biotechnology such as genetically modified cells, antibodies, vaccine and gene therapy, genetic testing for human disease/disorders, three-dimensional bio-printing, and medicines from plants, animals, fungi, and bacteria;

(D) identify applications of research and development in biotechnology such as deoxyribonucleic acid (DNA) and protein synthesis and sequencing, genetic testing and screening, DNA identification, RNAi, siRNA, miRNA, the CRISPR/Cas9 system, and synthetic biology;

(E) identify the applications of biotechnology in the fields of forensics, law enforcement, nanotechnology, and bioinformatics;

(F) research ethical considerations, laws, and regulations for biotechnological applications such as bioinformatics, genetic engineering, and nanotechnology; and

(G) identify the function of laboratory equipment, including a microscope, thermocycler, pH meter, hot plate stirrer, electronic balance, autoclave, centrifuge, transilluminator, micropipette, incubator, electrophoresis unit, vortex mixer, water bath, laboratory glassware, biosafety cabinet, and chemical fume hood.

§127.474. Mathematics for Medical Professionals (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for student in Grades 11 and 12. Prerequisites: Geometry and Algebra II. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Mathematics for Medical Professionals course is designed to serve as the driving force behind the Texas essential knowledge and skills for mathematics, guided by the college and career readiness standards. By embedding statistics, probability, and finance, while focusing on fluency and solid understanding in medical mathematics, students will extend and apply mathematical skills necessary for health science professions. Course content consists primarily of high school level mathematics concepts and their applications to health science professions.

(4) The mathematical process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in health science professionsÍ¾

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining

a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solutionÍ¾

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems in health science professionsÍ¾

(D) communicate mathematical ideas, reasoning, and their implications to the health science field using multiple representations, including symbols, diagrams, graphs, and language as appropriateÍ¾

(E) create and use representations to organize, record, and communicate mathematical ideas in health science professionsÍ¾

(F) analyze mathematical relationships to connect and communicate mathematical ideas in health science professionsÍ¾ and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication as it applies to health science professions.

(2) The student generates deeper mathematical understandings through problems involving numerical data that arise in health science professions. The student extends existing knowledge and skills to analyze real-world clinical situations. The student is expected to:

(A) add, subtract, multiply, and divide rational numbers fluently in problem-solving situations related to health science professionsÍ¾

(B) keep track of and manage inventory using the First In, Last Out (FILO) conceptÍ¾

(C) solve health science related problems involving ratios, rates, and percentages accurately and precisely, including lab analysis, body fluid analysis, vital signs, medication dosages and administration, growth charts, body surface area, parenteral solutions and data collection related to homeostasisÍ¾

(D) learn to read and use military time fluently for health science situations, including medication administration, scheduling, and documentationÍ¾

(E) apply appropriate estimation techniques used in health science professions to estimate percent and then confirm those estimates with calculationsÍ¾ and

(F) read and determine accurate numerical value of Roman numerals as used in the health science professions, including cranial nerves.

(3) The student applies the process standards in mathematics to create and analyze mathematical models of health science situations to make informed decisions related to improved health care outcomes by appropriate, proficient, and efficient use of tools, including technology. The student judges the validity of a prediction and uses mathematical models to represent, analyze, and solve dynamic health care problems. The student is expected to:

(A) collect data to create a scatterplot and apply various functions to model the data in an effort to interpret results and make predictions in health science situations such as interpreting growth charts, interpreting disease and mortality rates, and diagnosing and determining treatment modalitiesÍ¾

(B) create, represent, and analyze appropriate mathematical functions such as linear, quadratic, exponential, logarithmic, and sinusoidal functions used to model, interpret and predict situations that occur in health science professions such as supply and demand, inventory control, and cost analysis within clinical situationsÍ¾

(C) determine or analyze an appropriate sinusoidal model for health science situations that can be modeled with periodic functions, including those related to electrocardiograms (EKG), repolarization of the heart, and medication dosage and administrationÍ¾

(D) write and solve systems of equations, especially those representing mixtures, which apply to health science situations, including intravenous (IV) solutions and medication dosagesÍ¾

(E) use properties of logarithmic and exponential functions to solve equations related to health science situations such as determining the pH of a solution, the concentration of hydrogen ions (H+) given the pH, calculating the absorbance and transmittance, and determining exponential growth and decayÍ¾ and

(F) calculate accurate and precise unit rates used in health science situations.

(4) The student applies mathematical process standards to obtain accurate and precise measurements. The student is expected to:

(A) define each of the health science professions that require a unique set of measurement or calculation standards and explain or identify the importance of each measurement system (apothecary, metric, household systems)Í¾

(B) explain the necessity of obtaining accurate measurements in the health science professionsÍ¾

(C) use dimensional analysis with precision and accuracy in performing unit conversions from one measurement system to another, including the use of proportions and unit rates in pharmacologyÍ¾

(D) classify the specific system to which a given unit belongs and explain its similarity or differences to units in other measurement systemsÍ¾

(E) select and use appropriate measurement tools used in health science professions such as rulers, tape measures, thermometers, syringes, scales, and sphygmomanometer gauges to obtain accurate and precise measurementsÍ¾ and

(F) select and use appropriate measurement techniques used in health science professions to obtain accurate and precise measurements, including determining measures for medication, nutrition, fluids, and homeostasis.

(5) The student applies mathematical process standards to analyze statistical information used in health science professions. The student is expected to:

(A) obtain and analyze lab reports to evaluate if values lie outside normal parameters;

(B) obtain and analyze vital signs by comparing to normal parametersÍ¾

(C) calculate and apply measures of central tendency in application problems in the health science fieldÍ¾

(D) demonstrate an understanding of the significance of the normal distributionÍ¾

(E) demonstrate an understanding of and apply the Empirical Rule to find probabilities from normal distributionsÍ¾

(F) calculate and use the z-score to calculate standard deviation of a normal distribution using a formulaÍ¾

(G) calculate the percentile rank for a given score using a formulaÍ¾

(H) describe characteristics of well-designed and well-conducted experiments, observational studies, and surveys in the health science field, including the ethical issues associated with eachÍ¾

(I) distinguish between populations and samplesÍ¾

(J) explain placebo and placebo effectÍ¾ and

(K) define epidemiology and its extension of statistical procedures to public health issues.

(6) The student applies mathematical process standards to solve geometric problems arising in health science professions. The student is expected to:

(A) calculate volumes of various liquids and solids encountered in health science professions, including irregularly shaped solids, using formulas and geometric reasoningÍ¾

(B) calculate surface area of various surfaces encountered in health science professions, including body surface area, using formulas and geometric reasoningÍ¾

(C) calculate appropriate angles encountered in health science professions such as medication administration, body positioning, and physical therapy using geometric reasoningÍ¾ and

(D) calculate and analyze range of motion using a goniometer.

§127.475. Biotechnology I (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: one credit in biology. Recommended prerequisites: Principles of Bioscience and one credit in chemistry. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) In Biotechnology I, students will apply advanced academic knowledge and skills to the emerging fields of biotechnology such as agricultural, medical, regulatory, and forensics. Students will have the opportunity to use sophisticated laboratory equipment, perform statistical analysis, and practice quality-control techniques. Students will conduct laboratory and field investigations and make informed decisions using critical thinking, scientific problem solving, and the engineering design process. Students in Biotechnology I will study a variety of topics that include structures and functions of cells, nucleic acids, proteins, and genetics.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as microscopes, thermocyclers, pH meters, hot plate stirrers, glass bulb thermometers, timing devices, electronic balances, vortex mixers, autoclaves, micropipettes, centrifuges, gel and capillary electrophoresis units, cameras, data collection probes, spectrophotometers, transilluminators, incubators, water baths, laboratory glassware, biosafety cabinets, and chemical fume hoods;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using laboratory notebooks, written lab reports, graphs, charts, tables, digital tools, diagrams, scientific drawings, and student-prepared models;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a STEM field.

(5) The student explores the emerging field of biotechnology. The student is expected to:

(A) define biotechnology and provide examples of biotechnology products such as recombinant proteins, fermented foods, biopharmaceuticals, and genetically modified foods;

(B) compare applications of bioinformatics such as deoxyribonucleic acid (DNA) barcoding, sequencing, National Center for Biotechnology Information (NCBI) tools, ClinVar, Genemonon Mastermind, genetic testing, phylogenetic relationships, and the use of online databases;

(C) research and identify career opportunities in genetics, bioinformatics, and in fields such as molecular, forensic, medical, regulatory, and agricultural biotechnology;

(D) identify significant contributions of diverse scientists to biotechnology and explain their impact on society;

(E) define bioethics and evaluate the applications of bioethics;

(F) evaluate different points of view about issues and current events in biotechnology;

(G) identify applications in agricultural biotechnology such as genetically modified organisms (GMOs), plant propagation from tissue culturing, and aquaculture hydroponics;

(H) identify applications in medical biotechnology such as vaccines production, stem cells therapy, gene therapy, pharmaceutical production, pharmacogenetics, genomics, synthetic biology, and personalized medicine;

(I) identify applications in forensic biotechnology such as capillary electrophoresis, real-time polymerase chain reaction, DNA fingerprinting, restriction fragment length polymorphisms (RFLP) analysis, toxicology, and serology; and

(J) identify solutions to waste through bioremediation and non-biotechnological standard solutions such as landfills, incineration, absorbent materials, and catalytic materials.

(6) The student summarizes biotechnology laboratory procedures and their applications in the biotechnology industry. The student is expected to:

(A) identify the major sectors of the biotechnology industry such as medical and pharmaceutical, agricultural, industrial, forensic, and research and development;

(B) identify the biotechnology laboratory procedures used in each sector such as selective breeding, genetic engineering, DNA analysis, and protein analysis; and

(C) compare and contrast the different applications used in biotechnology laboratory procedures of each sector.

(7) The student understands the role of genetics in the biotechnology industry. The student is expected to:

(A) explain terms related to molecular biology, including nucleic acids, nitrogen bases, nucleotides, mRNA, rRNA, tRNA, ribosomes, amino acids, transcription, translation, polymerase, and protein synthesis;

(B) compare and contrast the structures and functions of DNA and ribonucleic acid (RNA), including nitrogen bases, nucleotides, the helical nature of DNA, and hydrogen bonding between purines and pyrimidines;

(C) distinguish between nuclear and mitochondrial DNA and their gamete sources;

(D) describe the DNA replication process in eukaryotic and prokaryotic cells, including leading and lagging strands and Okazaki fragments;

(E) illustrate the process of protein synthesis, including ribosomal subunits and the role of tRNA;

(F) describe the structures and functions of proteins, including three-dimensional folding, enzymes, and antibodies;

(G) explain the molecular structures of genes, including enhancers, promoters, exons, introns, and coding regions;

(H) describe the different types of mutations, including inversions, deletions, duplications, and substitutions;

(I) explain the effects of mutation types on phenotype and gene function; and

(J) describe unique elements of the molecular structure of a chromosome such as short tandem repeats (STR), transposons, and methylation and acetylation of DNA.

(8) The student analyzes the importance of recombinant DNA technology and genetic engineering. The student is expected to:

(A) describe the fundamental steps in recombinant DNA technology;

(B) explain how recombinant DNA technology such as nuclear transfer cloning is used to clone genes and create recombinant proteins;

(C) explain the role of tissue cultures in genetic modification procedures;

(D) describe plant- and animal-tissue culture procedures;

(E) compare and contrast growing conditions for plant and animal tissue cultures;

(F) explain the role of restriction enzymes; and

(G) distinguish between vectors commonly used in biotechnology for DNA insertion, including plasmids, adenoviruses, retroviruses, and bacteriophages.

(9) The student examines federal, state, local, and industry regulations as related to biotechnology. The student is expected to:

(A) discuss the relationship between the local, state, and federal agencies responsible for regulation of the biotechnology industry such as the U.S. Department of Agriculture (USDA), the Environmental Protection Agency (EPA), the U.S. Food and Drug Administration (FDA), and the Centers for Disease Control and Prevention (CDC); and

(B) analyze policies and procedures used in the biotechnology industry such as quality assurance, standard operating procedures (SOPs), Good Manufacturing Practices (GMPs), and International Organization for Standardization (ISO) quality systems.

(10) The student performs biotechnology laboratory procedures. The student is expected to:

(A) measure volumes and weights to industry standards with accuracy and precision;

(B) analyze data and perform calculations and statistical analysis as it relates to biotechnology laboratory experiments;

(C) demonstrate proficiency in pipetting techniques;

(D) identify microorganisms using staining methods such as the Gram stain, methylene-blue stain, and acid-fast staining;

(E) prepare a restriction digest, isolate nucleic acids, and evaluate results using techniques such as gel and capillary electrophoresis, Northern blot analysis, and Southern blot analysis;

(F) explain the importance of media components to the outcome of cultures;

(G) isolate, maintain, and store microbial cultures safely;

(H) prepare seed inoculum; and

(I) perform plating techniques such as streak plating, spread plating, and the Kirby-Bauer method.

(11) The student prepares solutions and reagents for the biotechnology laboratory. The student is expected to:

(A) demonstrate aseptic techniques for establishing and maintaining a sterile work area;

(B) prepare, dispense, and monitor physical properties of stock reagents, buffers, media, and solutions;

(C) calculate and prepare a dilution series; and

(D) determine optimum conditions of reagents for experimentation.

(12) The student conducts quality-control analysis while performing biotechnology laboratory procedures. The student is expected to:

(A) perform validation testing on laboratory reagents and equipment; and

(B) analyze data and perform calculations and statistical analysis on results of quality-control samples.

§127.476. Biotechnology II (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in chemistry and Biotechnology I. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) Biotechnology II has the components of any rigorous scientific or bioengineering program of study. This course applies the standard skills mastered in Biotechnology I and includes additional skills related to assay design, protein analysis, applications of genetic engineering, and quality management. After taking this course, students should be prepared for entry-level lab technician jobs.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as microscopes, thermocyclers, pH meters, hot plate stirrers, glass bulb thermometers, timing devices, electronic balances, vortex mixers, autoclaves, micropipettes, centrifuges, gel and capillary electrophoresis units, cameras, data collection probes, spectrophotometers, transilluminators, incubators, water baths, laboratory glassware, biosafety cabinets, and chemical fume hoods;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using laboratory notebooks, written lab reports, graphs, charts, tables, digital tools, diagrams, scientific drawings, and student-prepared models;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a STEM field.

(5) The student prepares for an entry-level career in biotechnology. The student is expected to:

(A) research and identify career opportunities in genetics, bioinformatics, and fields such as molecular, forensic, medical, regulatory, and agricultural biotechnology;

(B) identify the significance of recent advances in molecular, forensic, medical, regulatory, and agricultural biotechnology;

(C) discuss current bioethical issues related to the field of biotechnology;

(D) create a job-specific resume; and

(E) develop a career plan.

(6) The student analyzes academic and professional journals and technical reports. The student is expected to:

(A) identify the scientific methodology used by a researcher;

(B) examine a prescribed research design and identify dependent and independent variables;

(C) evaluate a prescribed protocol to determine the purpose for each of the procedures performed; and

(D) interpret data and evaluate conclusions.

(7) The student explores assay design in the field of biotechnology. The student is expected to:

(A) define assay requirements and optimizations;

(B) perform statistical analysis on assay design and experimental data such as linearity, system sustainability, limit of detection, and R2 values;

(C) determine an unknown protein concentration using a standard curve and technique such as a Bradford assay; and

(D) evaluate enzyme kinetics using a colorimetric assay.

(8) The student explores applications related to protein expression in the field of biotechnology. The student is expected to:

(A) describe the fundamental steps in recombinant deoxyribonucleic acid (DNA) technology;

(B) produce a recombinant protein such as green fluorescent protein (GFP);

(C) analyze proteins using techniques such as enzyme-linked immunosorbent assay (ELISA), spectrophotometry, and sodium dodecyl sulfate polyacrylamide gel electrophoresis (SDS-PAGE); and

(D) isolate a specific protein from a biological sample using techniques such as chromatography and Western blot analysis.

(9) The student explores applications of recombinant DNA technology and genetic engineering. The student is expected to:

(A) prepare and maintain tissue cultures commonly used in genetic modification procedures;

(B) evaluate the effects of changes to growing conditions such as pH, temperature, and growth media;

(C) evaluate the results of a bacterial transformation using a restriction enzyme digest and Southern blot analysis;

(D) compare and contrast vectors commonly used in biotechnology applications, including plasmids, adenoviruses, retroviruses, and bacteriophages;

(E) explain the steps and components of the polymerase chain reaction (PCR); and

(F) explain applications of CRISPR/Cas9 technology in gene editing and diagnostics.

(10) The student prepares solutions and reagents for the biotechnology laboratory. The student is expected to:

(A) demonstrate aseptic techniques for establishing and maintaining a sterile work area;

(B) prepare, dispense, and monitor physical properties of stock reagents, buffers, media, and solutions;

(C) calculate and prepare a dilution series;

(D) determine acceptability and optimum conditions of reagents for experimentation; and

(E) prepare multi-component solutions of given molarity or concentration and volume.

(11) The student investigates the role of quality in the biotechnology industry, The student is expected to:

(A) describe the product pipeline in the biotechnology industry;

(B) describe the importance of quality assurance and quality control;

(C) explain the importance of documentation to quality assurance and quality control;

(D) describe the importance of corrective and preventive action (CAPA);

(E) describe Quality Management Systems (QMS) components, including inspection, audit, surveillance, and prevention;

(F) describe Good Manufacturing Practices (GMP), Good Clinical Practices (GCP), Good Documentation Practices (GDP), Good Lab Practices (GLP), and International Organization for Standardization (ISO);

(G) perform validation testing on laboratory reagents and equipment;

(H) analyze data and perform calculations and statistical analysis on results of quality-control samples such as standard deviation and percent error; and

(I) apply and create industry protocols such as laboratory method protocols, standard operating procedures (SOPs), and validation forms.

§127.477. Medical Terminology (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) The Medical Terminology course is designed to introduce students to the structure of medical terms, including prefixes, suffixes, word roots, singular and plural forms, and medical abbreviations. The course allows students to achieve comprehension of medical vocabulary appropriate to medical procedures, human anatomy and physiology, and pathophysiology.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health science industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students should identify the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health science career through further education and employment.

(6) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student recognizes the terminology related to the health science industry. The student is expected to:

(A) identify abbreviations, acronyms, and symbols related to the health science industry;

(B) recognize the incorrect use of abbreviations, acronyms, and symbols through review of The Joint Commission's "Do Not Use List";

(C) identify and define the component parts of medical words, including root, prefix, suffix, and combining vowels;

(D) practice word-building skills;

(E) research the origins of eponyms;

(F) recall directional terms and anatomical planes related to body structure;

(G) define and accurately spell occupationally specific terms such as those relating to the body systems, surgical and diagnostic procedures, diseases, and treatment; and

(H) use prior knowledge and experiences to understand the meaning of terms as they relate to the health science industry.

(2) The student demonstrates communication skills using the terminology applicable to the health science industry. The student is expected to:

(A) demonstrate appropriate verbal strategies such as correct pronunciation of medical terms and written strategies such as correct spelling in a variety of health science scenarios;

(B) employ increasingly precise language to communicate; and

(C) translate technical material related to the health science industry.

(3) The student examines available resources. The student is expected to:

(A) examine medical and dental dictionaries and multimedia resources;

(B) integrate resources to interpret technical materials; and

(C) investigate electronic and digital media with appropriate supervision.

(4) The student interprets medical abbreviations. The student is expected to:

(A) distinguish medical abbreviations used throughout the health science industry; and

(B) translate medical abbreviations in simulated technical material such as physician progress notes, radiological reports, and laboratory reports.

(5) The student appropriately translates health science industry terms. The student is expected to:

(A) interpret, transcribe, and communicate vocabulary related to the health science industry;

(B) translate medical terms to conversational language to facilitate communication;

(C) distinguish medical terminology associated with medical specialists such as geneticists, pathologists, and oncologists;

(D) summarize observations using medical terminology; and

(E) interpret contents of medical scenarios correctly.

§127.478. Health Science Theory (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: one credit in biology and at least one credit in a course from the health science career cluster. Recommended prerequisite: Medical Terminology. Recommended corequisite: Health Science Clinical. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Health Science Theory course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will become familiar with industry-based standards for documenting and maintaining medical information; research industry employment requirements, including education, certification, and licensing requirements; and evaluate ethical and legal responsibilities of health science professionals. Students will employ hands-on experiences for continued clinical knowledge and skill development.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health science industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students should identify the employment opportunities, technology, and safety requirements of each system. Students are expected to learn the knowledge and skills necessary to pursue a health science career through further education and employment.

(6) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates patient-centered skills and interactions that foster trust and lead to a quality customer service experience. The student is expected to:

(A) demonstrate care, empathy, and compassion;

(B) communicate medical information accurately and efficiently in language that patients can understand; and

(C) comply with Health Insurance Portability and Accountability Act (HIPAA) policy standards.

(2) The student applies mathematics, science, English language arts, and social studies in health science. The student is expected to:

(A) solve mathematical calculations appropriate to situations in a healthcare-related environment;

(B) express ideas clearly in writing and develop skills in documentation related to health science;

(C) interpret complex technical material related to the health science industry;

(D) summarize biological and chemical processes in the body such as maintaining homeostasis; and

(E) research topics related to health science such as the global impact of disease prevention.

(3) The student demonstrates verbal, non-verbal, and electronic communication skills. The student is expected to:

(A) demonstrate therapeutic communication appropriate to the situation;

(B) use appropriate verbal and non-verbal skills when communicating with persons with sensory loss and language barriers in a simulated setting; and

(C) use electronic communication devices in the classroom or clinical setting appropriately.

(4) The student analyzes and evaluates communication skills for maintaining healthy relationships in the healthcare workplace. The student is expected to:

(A) evaluate how healthy relationships influence career performance;

(B) identify the role of communication skills in building and maintaining healthy relationships;

(C) demonstrate strategies for communicating needs, wants, and emotions in a healthcare setting; and

(D) evaluate the effectiveness of conflict-resolution techniques in various simulated healthcare workplace situations.

(5) The student documents and records medical information into a permanent health record. The student is expected to:

(A) research document formats such as dental or medical records;

(B) prepare health documents or records according to industry-based standards; and

(C) record health information on paper and electronic formats such as patient history, vital statistics, and test results.

(6) The student describes industry requirements necessary for employment in health science occupations. The student is expected to:

(A) research education, certification, licensing, and continuing education requirements and salary related to specific health science careers; and

(B) practice employment procedures for a specific health science career such as resume building, application completion, and interviewing.

(7) The student identifies problems and participates in the decision-making process. The student is expected to:

(A) apply critical-thinking, adaptability, and consensus-building skills to solve problems relevant to health science;

(B) evaluate the impact of decisions in health science; and

(C) suggest modifications to a decision or plan based on healthcare outcomes.

(8) The student demonstrates comprehension and proficiency of clinical skills used by health science professionals in a classroom or clinical setting. The student is expected to:

(A) comply with specific industry standards related to safety requirements;

(B) employ medical vocabulary specific to the healthcare setting;

(C) perform admission, discharge, and transfer functions in a simulated setting;

(D) demonstrate skills related to assisting patients with activities of daily living such as dressing, undressing, grooming, bathing, and feeding;

(E) determine proper equipment needed for patient ambulation such as gait belts, wheelchairs, crutches, or walkers;

(F) demonstrate skills related to assessing range of motion and assisting with mobility, including positioning, turning, lifting, and transferring patients for treatment or examination;

(G) role play techniques used in stressful situations such as situations involving trauma and chronic and terminal illness;

(H) demonstrate first aid, vital signs, cardiopulmonary resuscitation, and automated external defibrillator skills; and

(I) identify basic skills specific to a health science profession such as medical assistant, dental assistant, emergency medical technician-basic, phlebotomy technician, and pharmacy technician.

(9) The student evaluates ethical behavioral standards and legal responsibilities of a health science professional. The student is expected to:

(A) research and describe the role of professional associations and regulatory agencies;

(B) examine legal and ethical behavior standards such as Patient Bill of Rights, advanced directives, and HIPAA; and

(C) investigate the legal, ethical, and professional ramifications of unacceptable or discriminatory behavior.

(10) The student exhibits the leadership skills necessary to function in a healthcare setting. The student is expected to:

(A) identify essential leadership skills of health science professionals;

(B) assess group dynamics in real or simulated groups; and

(C) integrate consensus-building techniques.

(11) The student maintains a safe work environment. The student is expected to:

(A) describe governmental regulations and guidelines from entities such as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), Occupational Safety and Health Administration (OSHA), U.S. Food and Drug Administration (FDA), The Joint Commission, and the National Institute of Health (NIH), and Texas Department of State Health Services (DSHS);

(B) explain protocols related to hazardous materials and situations such as personal protective equipment (PPE) and blood borne pathogen exposure;

(C) describe how to assess and report unsafe conditions;

(D) identify the benefits of recycling and waste management for cost containment and environmental protection; and

(E) demonstrate proper body mechanics to reduce the risk of injury.

(12) The student assesses wellness strategies for the prevention of disease. The student is expected to:

(A) research wellness strategies for the prevention of disease;

(B) evaluate positive and negative effects of relationships on physical and emotional health;

(C) explain the benefits of positive relationships between community members and health professionals in promoting a healthy community;

(D) research and analyze the effects of access to quality health care;

(E) research alternative health practices and therapies; and

(F) explain the changes in structure and function of the body due to trauma and disease.

§127.479. Health Science Clinical (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Biology. Corequisite: Health Science Theory. This course must be taken concurrently with Health Science Theory and may not be taken as a stand-alone course. Districts are encouraged to offer this course in a consecutive block with Health Science Theory to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Health Science Clinical course is designed to provide for the development of advanced knowledge and skills related to a wide variety of health careers. Students will employ hands-on experiences for continued knowledge and skill development.

(4) To pursue a career in the health science industry, students should recognize, learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health science industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students should identify the employment opportunities, technology, and safety requirements of each system. Students are expected to apply the knowledge and skills necessary to pursue a health science career through further education and employment.

(6) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in health science. The student is expected to:

(A) solve mathematical calculations appropriate to situations in a health-related environment;

(B) communicate using medical terminology;

(C) express ideas in writing and develop skills in documentation;

(D) interpret complex technical material related to the health science industry;

(E) summarize biological and chemical processes that maintain homeostasis;

(F) explain the changes in structure and function due to trauma and disease; and

(G) research the global impact of disease prevention and cost containment.

(2) The student displays verbal and non-verbal communication skills. The student is expected to:

(A) demonstrate therapeutic communication appropriate to the situation;

(B) execute verbal and nonverbal skills when communicating with persons with sensory loss and language barriers; and

(C) use electronic communication devices with appropriate supervision such as facsimile, scanner, electronic mail, and telephone.

(3) The student analyzes and evaluates communication skills for maintaining healthy relationships throughout the life span. The student is expected to:

(A) evaluate how a healthy relationship influences career goals;

(B) demonstrate communication skills in building and maintaining healthy relationships;

(C) demonstrate strategies for communicating needs, wants, and emotions; and

(D) evaluate the effectiveness of conflict resolution techniques in various practical situations.

(4) The student relates appropriate information in the practical setting to the proper authority. The student is expected to:

(A) identify and retrieve reportable information; and

(B) report information according to facility policy in the practical setting.

(5) The student identifies documents integrated into the permanent record of the health informatics system. The student is expected to:

(A) research and describe document formats; and

(B) compile and record data according to industry based standards.

(6) The student describes academic requirements necessary for employment in the health science industry. The student is expected to:

(A) research specific health science careers; and

(B) review employment procedures for a specific health science career.

(7) The student identifies problems and participates in the decision-making process. The student is expected to:

(A) analyze systematic procedures for problem solving;

(B) evaluate the impact of decisions; and

(C) suggest modifications based on decision outcomes.

(8) The student implements the knowledge and skills of a health science professional in the clinical setting. The student is expected to:

(A) comply with specific industry standards related to safety and substance abuse;

(B) model industry expectations of professional conduct such as attendance, punctuality, personal appearance, hygiene, and time management;

(C) articulate comprehension of assignment;

(D) employ medical vocabulary specific to the health care setting;

(E) perform admission, discharge, and transfer functions in a simulated setting;

(F) demonstrate skills related to activities of daily living in rehabilitative care such as range of motion, positioning, and ambulation according to the health science industry standards, regulatory agency standards, and professional guidelines;

(G) role play techniques used in stressful situations such as trauma, chronic, and terminal illness;

(H) demonstrate first aid, vital signs, cardiopulmonary resuscitation, and automated external defibrillator skills in a laboratory setting; and

(I) perform skills specific to a health science professional such as medical assistant, dental assistant, emergency medical technician-basic, phlebotomy technician, and pharmacy technician.

(9) The student evaluates ethical behavioral standards and legal responsibilities. The student is expected to:

(A) research and describe the role of professional associations and regulatory agencies;

(B) examine legal and ethical behavior standards such as Patient Bill of Rights, Advanced Directives, and the Health Insurance Portability and Accountability Act;

(C) investigate the legal and ethical ramifications of unacceptable behavior; and

(D) perform within the designated scope of practice.

(10) The student exhibits the leadership skills necessary to function in a democratic society. The student is expected to:

(A) identify leadership skills of health science professionals;

(B) participate in group dynamics; and

(C) integrate consensus-building techniques.

(11) The student maintains a safe environment. The student is expected to:

(A) conform to governmental regulations and guidelines from entities such as the World Health Organization, Centers for Disease Control and Prevention, Occupational Safety and Health Administration, U.S. Food and Drug Administration, Joint Commission, and National Institute of Health;

(B) explain protocol related to hazardous materials and situations such as material safety data sheets;

(C) observe and report unsafe conditions; and

(D) practice recycling and waste management for cost containment and environmental protection.

(12) The student assesses wellness strategies for the prevention of disease. The student is expected to:

(A) research wellness strategies for the prevention of disease;

(B) evaluate positive and negative effects of relationships on physical and emotional health;

(C) explain the benefits of positive relationships among community health professionals in promoting a healthy community;

(D) research and analyze access to quality health care; and

(E) research alternative health practices and therapies.

§127.480. World Health and Emerging Technologies (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology and at least one credit in a Level 2 or higher course from the health science career cluster. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The World Health and Emerging Technologies course is designed to examine major world health problems and emerging technologies as solutions to these medical concerns. It is designed to improve students' understanding of cultural, infrastructural, political, educational, and technological constraints and inspire ideas for appropriate technological solutions to global medical care issues.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores and discusses current major human health problems in the world. The student is expected to:

(A) describe the pathophysiology of the three leading causes of death in developing and developed countries;

(B) discuss history of diseases and the evolution of medical technology over time;

(C) contrast health problems in developing and developed countries;

(D) compare the functions of public health organizations, including the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO), at the local, state, national, and international levels;

(E) define and calculate incidence, morbidity, and mortality;

(F) identify and describe the challenges in global health that can have the greatest impact on health in developing nations; and

(G) investigate various social determinants of health such as food insecurity, homelessness, or financial insecurities.

(2) The student explains who pays for health care in the world today. The student is expected to:

(A) compare the availability and quality of health care in developing and developed countries;

(B) discuss and contrast the four basic healthcare system models, including the Beveridge Model, Bismarck Model, National Health Insurance Model, and the Out-of-Pocket Model, and compare these models to existing payment mechanisms in the United States of America;

(C) explain how countries that have different healthcare systems such as Canada, the United Kingdom, Japan, Germany, Taiwan, Switzerland, and the United States of America pay for health care and compare their patient outcomes such as infant mortality rates, rate of cancer, or rate of heart disease;

(D) describe how healthcare expenditures have changed over time; and

(E) identify the major contributors to the rising healthcare industry costs.

(3) The student describes the engineering technologies developed to address clinical needs. The student is expected to:

(A) describe technologies that support the prevention and treatment of infectious diseases;

(B) explain the implication of vaccines on the immune system and on public health;

(C) discuss the dangers of antibiotic overuse and misuse;

(D) investigate technologies such as genetics and molecular diagnostics used for the early detection and treatments of several types of cancers;

(E) describe and discuss the technologies used in the diagnosis and treatment of heart disease;

(F) describe and discuss technologies developed to support vital organ failure; and

(G) investigate emerging digital technology such as telehealth and remote monitoring and its impact on healthcare delivery.

(4) The student explores how human clinical trials are designed, conducted, and evaluated. The student is expected to:

(A) describe and discuss types of clinical trials, including the role of the institutional review board;

(B) define and calculate a sample size;

(C) identify quantitative and qualitative methods used in clinical trials; and

(D) compare and contrast different phases of pharmaceutical trials.

(5) The student recognizes the ethical and legal aspects involved in clinical research. The student is expected to identify issues and explain the ethical and legal guidelines, including informed consent and patient confidentiality, for the conduct of research involving human subjects.

(6) The student explains how research guides the development of new medical technologies. The student is expected to:

(A) describe how health science research is funded;

(B) explain the role of the U.S. Food and Drug Administration in approving new drugs and medical devices; and

(C) analyze factors that affect the dissemination of new medical technologies.

(7) The student applies research principles to create a project that addresses a major health topic. The student is expected to:

(A) facilitate data analysis and communicate experimental results clearly by effectively using technology such as creating visual aids; and

(B) present the project to classmates, health professionals, parents, or instructors.

§127.481. Anatomy and Physiology (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: one credit in biology and one credit in chemistry, Integrated Physics and Chemistry, or physics. Recommended prerequisite: a course from the Health Science Career Cluster. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Anatomy and Physiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Anatomy and Physiology will study a variety of topics, including the structure and function of the human body and the interaction of body systems for maintaining homeostasis.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Scientific and engineering practices. The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as lab notebooks or journals, calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, meter sticks, electronic balances, micro pipettors, hand lenses, Celsius thermometers, hot plates, timing devices, Petri dishes, agar, lab incubators, dissection equipment, reflex hammers, pulse oximeters, stethoscope, otoscope, blood pressure monitors (sphygmomanometers), pen lights, ultrasound equipment, and models, diagrams, or samples of biological specimens or structures;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish among scientific hypotheses, theories, and laws.

(2) Scientific and engineering practices. The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) Scientific and engineering practices. The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) Scientific and engineering practices. The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing, so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) or health science field in order to investigate careers.

(5) Human body organization. The student demonstrates an understanding of the anatomic and physiological basis of life and the ability to explain the interdependence of structure and function in biological systems. The student is expected to:

(A) distinguish between the six levels of structural organization in the human body, including chemical, cellular, tissue, organ, system, and organism, and explain their interdependence;

(B) identify and use appropriate directional terminology when referring to the human body, including directional terms, planes, body cavities, and body quadrants;

(C) identify and describe the major characteristics of living organisms, including response to stimuli, growth and development, homeostasis, cellular composition, metabolism, reproduction, and the ability to adapt to the environment;

(D) research and describe negative and positive feedback loops as they apply to homeostasis; and

(E) research and identify the effects of the failure to maintain homeostasis as it relates to common diseases in each of the body systems.

(6) Histology. The student demonstrates the ability to analyze the structure and function of eukaryotic cells in relation to the formation of tissue. The student is expected to:

(A) define tissue and identify the four primary tissue types, their subdivisions, and functions;

(B) compare epithelial tissue and connective tissue in terms of cell arrangement and interstitial materials;

(C) describe the process of tissue repair involved in the normal healing of a superficial wound; and

(D) describe the general metabolic pathways of carbohydrates, lipids, and proteins.

(7) Skeletal system. The student analyzes the relationships between the anatomical structures and physiological functions of the skeletal system. The student is expected to:

(A) identify and differentiate between the axial skeleton and appendicular skeleton;

(B) identify the types of joints, including gliding, hinge, pivot, saddle, and ball and socket, and describe the movements of each;

(C) identify and locate the anatomy of bone, including spongy and compact tissue, epiphysis, diaphysis, medullary cavity, periosteum, bone marrow, and endosteum;

(D) explain the major physiological functions of the skeletal system;

(E) describe the role of osteoblasts, osteocytes, and osteoclasts in bone growth and repair;

(F) identify and describe the different types of fractures such as compound, complete, simple, spiral, greenstick, hairline, transverse, and comminuted; and

(G) identify and describe common diseases and disorders of the skeletal system such as scoliosis, osteoporosis, and bone cancer.

(8) Integumentary system. The student analyzes the relationships between the anatomical structures and physiological functions of the integumentary system. The student is expected to:

(A) identify and describe the structures of the integumentary system, including layers of the skin, accessory organs within each layer, and glandular components in each layer;

(B) describe the factors that can contribute to skin color;

(C) describe and explain the process of tissue repair and scar formation; and

(D) identify and describe common diseases and disorders of the integumentary system such as skin cancer and psoriasis.

(9) Muscular system. The student analyzes the relationships between the anatomical structures and physiological functions of the muscular system. The student is expected to:

(A) explain the major physiological functions of the muscular system, including voluntary movement, involuntary movement, heat production, and maintaining posture;

(B) explain the coordination of muscles, bones, and joints that allows movement of the body, including the methods of attachment of ligaments and tendons;

(C) examine common characteristics of muscle tissue, including excitability, contractibility, extensibility, and elasticity;

(D) identify and describe the appearance, innervation, and function of the three muscle types, including cardiac, skeletal, and smooth;

(E) examine the microscopic anatomy of a muscle fiber, including sarcomere, actin, and myosin;

(F) describe the mechanisms of muscle contraction at the neuromuscular junction;

(G) name, locate, and describe the action of major voluntary muscles in regions of the body, including the head and neck, trunk, upper extremity, and lower extremity;

(H) identify and describe common diseases and disorders of the muscular system such as muscle strains and muscular dystrophy; and

(I) analyze and describe the effects of pressure, movement, torque, tension, and elasticity on the human body.

(10) Nervous system. The student analyzes the relationship between the anatomical structures and physiological functions of the nervous system. The student is expected to:

(A) summarize and distinguish between the major physiological functions of the nervous system, including sensation, integration, and motor response;

(B) identify the senses and explain their relationship to nervous system;

(C) investigate and explain the interdependence between the cranial and spinal nerves with the special senses of vision, hearing, smell, and taste;

(D) describe the anatomy of the structures associated with the senses, including vision, hearing, smell, taste, and touch;

(E) identify the anatomical and physiological divisions of the peripheral nervous system and central nervous system;

(F) explain the glial cells within the central nervous system and peripheral nervous system and their associated functions;

(G) analyze the functional and structural differences between gray and white matter relative to neurons;

(H) distinguish between the types of neurons and explain the initiation of a nerve impulse during resting and action potential;

(I) categorize the major neurotransmitters by chemical and physical mechanisms; and

(J) identify and describe common diseases and disorders of the nervous system such as epilepsy, neuralgia, Parkinson's disease, and Alzheimer's disease.

(11) Endocrine system. The student analyzes the relationships between the anatomical structures and physiological functions of the endocrine system. The student is expected to:

(A) identify and locate the nine glands associated with the endocrine system, including the ovaries, testes, pineal gland, pituitary gland, thyroid gland, parathyroid glands, thymus, pancreas, and adrenal glands;

(B) compare and contrast endocrine and exocrine glands and identify the glands associated with each;

(C) describe the hormones associated with each endocrine gland;

(D) research the impact of the endocrine systems on homeostatic mechanisms and other body systems such as the integration between the hypothalamus and the pituitary gland;

(E) explain how the endocrine glands are regulated, including neural, hormonal, and humoral control; and

(F) identify and describe common diseases and disorders of the endocrine system such as hypothyroidism, pancreatic cancer, and diabetes.

(12) Urinary system. The student analyzes the relationships between the anatomical structures and physiological functions of the urinary system. The student is expected to:

(A) identify and describe the anatomical structures and functions of the urinary system, including the kidney, ureters, bladder, and urethra;

(B) compare and contrast the anatomical structures and describe the functions of the male and female urinary system;

(C) summarize and illustrate the structures, functions, and types of nephrons;

(D) examine the methods of fluid balance and homeostasis in the urinary system, including fluid intake and output;

(E) analyze the composition of urine and the process of urine formation, including filtration, reabsorption, and secretion;

(F) describe the relationship between the nervous system, renal system, and muscular system before and during micturition; and

(G) identify and describe common diseases and disorders of the urinary system such as chronic kidney disease, kidney stones, urinary tract infections, and renal cancer.

(13) Cardiovascular system. The student analyzes the relationships between the anatomical structures and physiological functions of the cardiovascular system. The student is expected to:

(A) identify the major functions of the cardiovascular system, including transport, maintaining homeostasis, and immune response;

(B) compare and contrast the anatomical structure of arteries, arterioles, capillaries, venules, and veins;

(C) investigate and illustrate how systemic circulation transports blood, gasses, and nutrients from the heart to the internal anatomy of the heart, including tissue layers, chambers, and valves, and external anatomy of the heart, including coronary vessels;

(D) describe the relationship between blood flow and blood pressure, including systolic and diastolic pressure, pulse pressure, and mean arterial pressure;

(E) compare and contrast coronary, pulmonary, and systemic circulation, and describe the major vessels of each;

(F) illustrate how the PQRST waves of an electrocardiogram (EKG) demonstrate the conduction of electricity through the structures of the heart;

(G) describe the relationship between the cardiovascular system, nervous system, and muscular system in regulating cardiac output; and

(H) identify and describe common diseases and disorders of the cardiovascular system such as heart disease, myocardial infarction, ischemia, and hypertrophic cardiomyopathy.

(14) Lymphatic system. The student analyzes the relationships between the anatomical structures and physiological functions of the lymphatic system and understands the immune response. The student is expected to:

(A) evaluate the interaction of the lymphatic system with other body systems such as the circulatory system;

(B) describe the structure and function of the lymphatic organs and explain how lymph moves through the body;

(C) identify and describe the role and function of the immune cells, including T cells and B cells, within the lymphatic system structures;

(D) identify and determine antigens associated with ABO blood typing, including Rhesus (Rh) factor;

(E) summarize the ways the body protects and defends against disease, including inflammation, barrier defenses, and active and passive immunity;

(F) describe the role of antigens and antibodies in the immune response; and

(G) identify and describe common diseases and disorders associated with the lymphatic and immune systems such as inherited or acquired immunodeficiencies, autoimmune diseases, and lymphomas.

(15) Digestive system. The student analyzes the relationships between the anatomical structures and physiological functions of the digestive system. The student is expected to:

(A) examine the anatomical structures and function of the alimentary canal and accessory organs;

(B) compare and contrast mechanical and chemical digestive processes;

(C) evaluate the modes by which energy is processed and stored within the body, including ingestion, propulsion, absorption, and elimination; and

(D) identify and describe common diseases and disorders of the digestive system such as gallstones, Crohn's disease, irritable bowel syndrome, and gastroesophageal reflux disorder.

(16) Respiratory system. The student analyzes the relationships between the anatomical structures and physiological functions of the respiratory system. The student is expected to:

(A) identify and sequence the anatomical structures and functions of the respiratory system;

(B) compare and contrast the functions of upper and lower respiratory tract;

(C) describe the physiology of respiration, including internal and external respiration and gas exchange;

(D) describe the relationship between the respiratory and cardiovascular systems during pulmonary circulation;

(E) investigate factors that affect respiration, including exercise and environmental changes such as altitude; and

(F) identify and describe common diseases of the respiratory system such as asthma, emphysema, pneumonia, viruses, and allergies.

(17) Reproductive system. The student analyzes the relationships between the anatomical structures and physiological functions of the reproductive system. The student is expected to:

(A) explain embryological development of cells, tissues, organs, and systems;

(B) describe and examine the location, structure, and functions of the internal and external female and male reproductive organs and accessory glands;

(C) describe and compare the process of oogenesis and spermatogenesis;

(D) research and discuss the physiological effects of hormones on the stages of the menstrual cycle;

(E) identify and distinguish the hormones involved in maturation and development throughout the life cycle, including puberty, gestation, and menopause; and

(F) identify and describe common diseases and disorders of the reproductive system such as sexually transmitted diseases and cancers of the female and male reproductive systems.

(18) Emerging technologies. The student identifies emerging technological advances in science and healthcare treatment and delivery. The student is expected to:

(A) research and discuss advances in science and medicine at the organ and tissue level such as bionics and wearable monitoring technologies; and

(B) research and describe advances in science and medicine at the cellular level such as stem cells and gene therapy.

§127.482. Pathophysiology (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, and at least one credit in a Level 2 or higher course from the health science career cluster. Recommended prerequisite: Anatomy and Physiology. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Pathophysiology course is designed for students to conduct laboratory and field investigations, use scientific methods during investigations, and make informed decisions using critical thinking and scientific problem solving. Students in Pathophysiology will study disease processes and how humans are affected. Emphasis is placed on prevention and treatment of disease.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, stereoscopes, metric rulers, electronic balances, gel electrophoresis apparatuses, micro pipettors, hand lenses, Celsius thermometers, hot plates, timing devices, Petri dishes, lab incubators, biochemical media and stains dissection equipment, meter sticks, and models, diagrams, or samples of biological specimens or structures;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using lab notebooks or journals, lab reports, labeled drawings, graphic organizers, peer reviewed medical journals, summaries, oral reports, and technology-based reports;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and

experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) or health science field in order to investigate careers.

(5) The student analyzes the mechanisms of pathology. The student is expected to:

(A) describe abnormal biological and chemical processes at the cellular level;

(B) examine and analyze changes resulting from mutations and neoplasms by examining cells, tissues, organs, and systems;

(C) investigate factors that contribute to disease, including age, gender, environment, lifestyle, and heredity; and

(D) analyze and describe how the body's compensating mechanisms attempt to maintain homeostasis when changes occur.

(6) The student examines the process of pathogenesis. The student is expected to:

(A) differentiate and identify pathogenic organisms using microbiological techniques such as gram staining, biochemical identification, and microscopic observation;

(B) research and summarize the stages of pathogenesis, including incubation period, prodromal period, and exacerbation or remission;

(C) analyze the body's natural defense systems against infection, including barriers, the inflammatory response, and the immune response;

(D) analyze other mechanisms of disease prevention and treatment such as vaccinations, antibiotics, chemotherapy, and immunotherapy; and

(E) evaluate the effects of chemical agents, environmental pollution, and trauma on the disease process.

(7) The student examines diseases throughout the body's systems. The student is expected to:

(A) investigate the etiology, signs and symptoms, diagnosis, prognosis, and treatment of diseases;

(B) explore and describe advanced technologies for the diagnosis and treatment of disease;

(C) research and describe reemergence of diseases such as malaria, tuberculosis, polio, and measles;

(D) research the causes, prevention, and impact of nosocomial infections and differentiate between the causes, prevention, and impact of nosocomial infections versus community-acquired infections;

(E) research and describe antibiotic-resistant diseases such as methicillin-resistant *Staphylococcus aureus*;

(F) differentiate between various types of diseases and disorders, including hereditary, infectious, and auto-immune; and

(G) investigate ways diseases such as diabetes, Parkinson's, lupus, and congestive heart failure affect multiple body systems.

(8) The student integrates the effects of disease prevention and control. The student is expected to:

(A) evaluate public health issues related to asepsis, isolation, immunization, and quarantine;

(B) analyze the effects of stress and aging on the body;

(C) analyze patient medical data and interpret medical laboratory test results to inform diagnosis and treatment;

(D) analyze and interpret epidemiological data to determine common trends and predict outcomes in disease progression;

(E) research and summarize diseases that threaten world health and propose intervention strategies; and

(F) develop a prevention plan that considers how behaviors contribute to lifestyle diseases.

§127.483. Pharmacy I (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10 and 11. Recommended prerequisites: Introduction to Pharmacy Science or Principles of Health Science and one credit in biology. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The goal of Pharmacy I is for the student to gain a strong foundation in the knowledge and skills needed to pursue a career in the pharmaceutical field (e.g., pharmacy technician, pharmacist). Knowledge includes pharmacology, pharmacy law, medication safety, the dispensing process, and inventory. Pharmacy I is designed to be the second course in a pathway leading to college and career readiness in the healthcare therapeutics professions. The course content aligns with the competencies of pharmacy technician certification examinations.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student communicates effectively with diverse populations. The student is expected to:

(A) practice a respectful and professional attitude when interacting with diverse patient populations, colleagues, and professionals; and

(B) compare communication techniques that are effective for various population clients such as terminally ill, intellectually disabled, visually/hearing impaired, and elderly/pediatric populations.

(2) The student interprets pharmacy correspondence utilizing medical abbreviations and terminology typically found in the pharmacy setting. The student is expected to:

(A) employ pharmacy terminology and abbreviations in creating and utilizing correspondence in the pharmacy such as prescriptions, medication administration records (MARs), and patient order sheets;

(B) compare terminology typically used in the community and institutional pharmacy settings; and

(C) translate sig codes and abbreviations used in the pharmacy.

(3) The student distinguishes between the requirements of various federal agencies. The student is expected to:

(A) explain the handling and disposal of non-hazardous, hazardous, and pharmaceutical substances and waste;

(B) discuss the requirements for controlled substance prescriptions, including new, refill, and transfer prescriptions, according to the Drug Enforcement Administration (DEA) controlled substances schedules;

(C) describe Food and Drug Administration (FDA) recall requirements based on classification for medications, devices, supplies, and supplements;

(D) interpret and apply state and federal laws pertaining to processing, handling, and dispensing of medications, including controlled substances;

(E) interpret state and federal laws and regulations pertaining to pharmacy technicians; and

(F) explain pharmacy compliance with professional standards and relevant legal, regulatory, formulary, contractual, and safety requirements.

(4) The student recalls drug information. The student is expected to:

(A) identify brand name, generic name, classification, and indication of use for common medications with automaticity;

(B) discuss common and life-threatening drug interactions and contraindications;

(C) identify narrow therapeutic index (NTI) medications; and

(D) access and use references such as United States Pharmacopeia (USP) standards, drug reference books, and clinical information sources as needed to perform job duties.

(5) The student explains the dispensing process. The student is expected to:

(A) identify a prescription or medication order for completeness, including drug strength, dosage form, directions, quantity, and refills, and obtain missing information if needed;

(B) communicate with patients to obtain information, including demographics, medication history, health conditions, allergies, and insurance, for the patient profile;

(C) practice assisting pharmacists in collecting, organizing, and recording demographic and clinical information for the *Pharmacists' Patient Care Process*;

(D) perform the necessary mathematical calculations required for order entry, including formulas, ratios, concentrations, percent strength, dilutions, proportions, and allegations;

(E) identify equipment and supplies, including diabetic supplies, spacers, and oral/injectable syringes, required for drug administration based on the package size and unit dose;

(F) identify and describe the importance of lot numbers, expiration dates, and National Drug Codes (NDC) on drug packaging;

(G) practice and adhere to effective infection control procedures;

(H) apply appropriate cleaning standards, including hand washing and cleaning counting trays, countertops, and equipment; and

(I) explain the state pharmacy boards' roles in the regulation of pharmacy technicians and that differences exist between states in the processing, handling, and dispensing of prescription medications.

(6) The student identifies common medication errors and explains error prevention strategies. The student is expected to:

(A) identify high-alert/risk and look-alike/sound-alike (LASA) medications;

(B) describe error prevention strategies, including using Tall Man lettering, trailing/leading zeros, and barcodes; separating inventory; and limiting use of error-prone abbreviations;

(C) describe types of prescription errors, including abnormal doses, early refill, incorrect quantity, incorrect patient, and incorrect drug;

(D) explain pharmacy professional standards for and the role of the pharmacy technician in the patient care process;

(E) identify opportunities to assist pharmacists in the identification of patients who desire or require counseling to optimize the use of medications, equipment, and devices;

(F) discuss the pharmacy technician's role in patient and medication safety practices such as how to calculate dosage of pediatric over-the-counter drugs;

(G) explain how pharmacy technicians assist pharmacists in responding safely and legally to emergent patient situations; and

(H) explain basic safety and emergency preparedness procedures applicable to pharmacy services.

(7) The student performs inventory procedures according to federal, state, local, and facility guidelines. The student is expected to:

(A) identify proper storage for medications in regard to temperature, light sensitivity, product demand, fast movers, cost, and restricted access;

(B) explain the definition and purpose of a formulary or approved/preferred product list;

(C) describe procedures for inventory control, including removal of expired and recalled drug products, rotating inventory, performing a physical inventory, ordering medications and supplies, monitoring periodic automatic replenishment (PAR) levels, and using just-in-time ordering;

(D) explain accepted procedures in purchasing pharmaceuticals, devices, and supplies; and

(E) explain accepted procedures for identifying and disposing of expired medications.

§127.484. Pharmacy II (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, and Pharmacy I. Recommended prerequisite: Algebra I, Introduction to Pharmacy Science, and Pharmacy I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Pharmacy II course provides students with the advanced knowledge and skills to explore various careers in the pharmacy field, including pharmacology, pharmacy law, medication errors, inventory pharmacy calculations, compounding, and workflow expectations in a pharmacy setting. Pharmacy II is designed to be the third course in a pathway leading to college and career readiness in the healthcare therapeutics professions. The course content aligns with the competencies of pharmacy technician certification examinations.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student communicates effectively with diverse populations. The student is expected to:

(A) practice a respectful and professional attitude in communications with diverse patient populations, colleagues, and professionals such as written, oral, and electronic communications;

(B) demonstrate communication techniques that are effective for various populations such as terminally ill, intellectually disabled, visually/hearing impaired, and elderly/pediatric populations; and

(C) demonstrate skills for supporting communication between various stakeholders such as serving as a liaison between the nurse and the patient.

(2) The student demonstrates the use of medical terminology and abbreviations in a pharmacy setting. The student is expected to:

(A) interpret and translate prescription and medication orders according to pharmacy settings such as community and hospital environments;

(B) create pharmacy correspondence such as prescriptions, medication administration records (MARs), and patient order sheets using medical terminology and abbreviations;

(C) use medical terminology found in various pharmacy settings to communicate appropriately; and

(D) translate sig codes and abbreviations used in the pharmacy to communicate instructions to patients.

(3) The student applies the strictest requirements using the laws of local, state, and federal agencies. The student is expected to:

(A) demonstrate the proper handling and disposal of non-hazardous, hazardous, and pharmaceutical substances and waste;

(B) apply the requirements for controlled substance prescriptions, including new, refill, and transfer prescriptions;

(C) apply the requirements for receiving, storing, ordering, labeling, and dispensing controlled substances and the reverse distribution, take-back, and loss or theft of controlled substances;

(D) classify controlled substances such as cocaine, heroin, marijuana, fentanyl, dextroamphetamine, amphetamine salts, benzodiazepines, and anabolic steroids according to their Drug Enforcement Administration (DEA) schedules;

(E) identify the federal requirements for restricted drugs such as pseudoephedrine and related medication processing programs such as Risk Evaluation and Mitigation Strategies (REMS) and iPLEDGE;

(F) demonstrate the process for Food and Drug Administration (FDA) recalls based on classification for medications, devices, supplies, and supplements; and

(G) explain pharmacy compliance with professional standards such as scope of practice and relevant legal, regulatory, formulary, contractual, and safety requirements.

(4) The student interprets drug information. The student is expected to:

(A) apply knowledge of brand name, generic name, classification, and indication of use for common medications such as the top 200 drugs with automaticity in a pharmacy setting;

(B) analyze the common and life-threatening drug interactions and contraindications such as drug-disease, drug-drug, drug-lab, and drug-food;

(C) apply knowledge of the narrow therapeutic index (NTI) to drug use evaluations; and

(D) integrate the use of digital and hard copy references such as United States Pharmacopeia (USP) standards, drug reference books, and clinical information sources as needed to perform job duties.

(5) The student demonstrates the dispensing process in various pharmacy settings. The student is expected to:

(A) analyze a prescription and medication order for completeness, including drug strength, dosage form, directions, quantity, date, and refills, and obtain missing information if needed;

(B) communicate with patients or care givers using the appropriate modality to obtain information, including demographics, medication history, health conditions, allergies, and insurance, for the patient profile;

(C) collect, organize, and record demographic and clinical information accurately for patient continuity of care;

(D) identify the required steps in preparing sterile compounded products, including putting on (donning) personal protective equipment (PPE), cleaning the vertical or horizontal flow hoods, selecting correct supplies, and preparing the product for dispensing;

(E) select the appropriate equipment and supplies, including diabetic supplies, spacers, and oral/injectable syringes, for drug administration based on package size and unit dose;

(F) apply lot numbers, expiration dates, and National Drug Codes (NDC) on drug packaging for the dispensing of medication; and

(G) differentiate between the use of effective infection control procedures such as sterile and non-sterile compounding in various pharmacy related settings.

(6) The student analyzes common medication errors and practices error prevention strategies. The student is expected to:

(A) use knowledge of high alert/risk and look-alike/sound-alike (LASA) medications to prevent medication errors;

(B) apply knowledge of current error prevention strategies such as using Tall Man lettering, trailing/leading zeros, and barcodes; separating inventory; and limiting use of error-prone abbreviations to prevent medication errors;

(C) apply knowledge of various prescription errors such as abnormal dose, early refill, incorrect quantity, incorrect patient, and incorrect drug for improved accuracy;

(D) demonstrate how to assist pharmacists in recognizing issues that require intervention such as adverse drug events, drug utilization review (DUR), and use of equipment and devices; and

(E) demonstrate knowledge of medication errors such as near miss and adverse events and various reporting procedures such as MedWatch, vaccine adverse event reporting system (VAERS), and route-cause analysis (RCA).

(7) The student applies pharmacy workflow procedures according to federal, state, local, and facility guidelines. The student is expected to:

(A) describe the process for creating a prescription or medication order in compliance with pharmacy standards such as standards for patient rights, completeness of a prescription or medication order, and authorization;

(B) discuss the steps in verifying a prescription or medication order such as right patient, right drug, right dosage, right time, and right route;

(C) identify the proper procedures for entering a prescription or medication order, including procedures for workstation, use of technology, validation with drug enforcement administration (DEA) calculations, and transcribing such as using military time and Roman numerals;

(D) apply the proper techniques for filling a prescription or medication order such as techniques for use of technology, counting, and selecting the correct medication;

(E) explain the proper procedure for the administration of prescription or medication orders such as ear drops, eye drops, inhalations, parenteral, and enteral;

(F) demonstrate knowledge of the workflow process for prescriptions and medication orders such as creation of the order, order entry, adjudication, verification, filling, labeling, billing, dispensing, and administration; and

(G) describe the elements of third-party billing for out-patient dispensing, including prescription insurance ID cards, group numbers, BIN numbers, prior authorization, quantity limits, patient co-pays, maximum out-of-pocket costs, and deductibles.

(8) The student evaluates mathematical process standards related to the practice of pharmacy. The student is expected to:

(A) calculate dosage calculations for adults and special populations using conversions, ratios, and dimensional analysis to perform duties in a pharmacy setting;

(B) apply conversions to systems of measurements, including apothecary, metric, and household, to perform duties in a pharmacy setting;

(C) calculate the flow rate (or rate of administration) for an IV solution using ratios and conversions such as milliliters to drops, weight, or hours to minutes;

(D) calculate days supply for a prescription order given a dose and sig;

(E) calculate volume or mass of each of the total parenteral nutrition (TPN) components such as lipids, amino acids, dextrose, calcium, and magnesium;

(F) calculate volume or mass of ingredients needed for compounding both sterile and non-sterile products;

(G) calculate amount needed for percent of weight-to-volume, volume-to-volume, and weight-to-weight based on stock concentration; and

(H) use calculations related to business math in a pharmacy setting, including profit, net profit, discounts, mark-ups, dispensing fee, average wholesale price, depreciation, and third-party.

(9) The student demonstrates the use of technology in a pharmacy setting. The student is expected to:

(A) identify the types and uses of automated dispensing technology such as cabinets, units, and carousels;

(B) demonstrate knowledge and components of pharmacy dispensing software used in the out-patient setting, the in-patient setting, and in-office use dispensing;

(C) apply professional standards using communication technology such as telephone, emails, fax, electronic prescriptions, and social media appropriate for a pharmacy setting;

(D) apply knowledge of technology hardware devices for input and output such as computers, scanners, printers, interface devices, and other devices; and

(E) select and use appropriate technology tools to search for drug information such as pill identification, adverse events, and contraindications.

(10) The student uses critical thinking, scientific reasoning, research, or problem solving to make informed decisions and communicate within and outside the classroom. The student is expected to:

(A) critique the validity and reliability of scientific research such as assessing for bias, conflict of interest, and study design;

(B) demonstrate the ability to independently find valid and reliable sources such as primary, secondary, and tertiary literature;

(C) identify safe use of online resources that maintain the privacy and confidentiality of the user and patient;

(D) analyze online resources used in scientific research;

(E) describe the recent innovations and advances in pharmacy;

(F) identify opportunities for extended learning experiences such as community services, career and technical service organizations (CTSOs), and professional organizations; and

(G) evaluate scientific information extracted from various sources such as accredited scientific journals, institutions of higher learning, current events, news reports, published journal articles, and marketing and promotional materials.

(11) The student performs inventory procedures according to federal, state, local, and facility guidelines. The student is expected to:

(A) analyze proper storage for medications in regard to temperature, light sensitivity, product demand, cost, and restricted access;

(B) analyze therapeutic substitutions and product selection using the knowledge of formularies or preferred product list;

(C) practice procedures for inventory control such as removal of expired/recalled drug products, rotating inventory, performing a physical inventory, and ordering medications/supplies;

(D) explain how just-in-time or drop ship ordering and periodic automatic replenishment (PAR) levels are used to maintain pharmacy inventory;

(E) analyze how laws affect the procedures for purchasing or ordering medications, devices, and supplies; and

(F) analyze lot numbers, expiration dates, and National Drug Codes (NDC) on drug packaging for inventory accuracy.

(12) The student demonstrates knowledge of safety procedures in a pharmacy setting. The student is expected to:

(A) apply appropriate hygiene and cleaning standards, including hand washing and cleaning counting trays, countertops, and equipment;

(B) perform basic safety and emergency preparedness procedures such as basic life support (BLS) and first aid applicable to pharmacy services;

(C) explain the risks of drug diversion to employees, patients, and the community;

(D) explain the potential solutions to minimize drug diversion such as identifying red flags, controlling inventory, and monitoring the prescription drug monitoring program (PDMP);

(E) explain the types and uses of PPE and the steps for putting on (donning) and removing (doffing) PPE; and

(F) explain why collecting and documenting patient allergies are important steps in medication safety.

§127.485. Pharmacology (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, and at least one credit in a Level 2 or higher course from the health science career cluster. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Pharmacology course is designed to study how natural and synthetic chemical agents such as drugs affect biological systems. Knowledge of the properties of therapeutic agents is vital in providing quality health care. It is an ever-changing, growing body of information that continually demands greater amounts of time and education from healthcare workers.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the field and foundation of pharmacology. The student is expected to:

(A) differentiate between pharmacology subdivisions, including pharmacodynamics, pharmacokinetics, pharmaceutics, and pharmacotherapeutics;

(B) use common drug information materials such as accredited scientific journals, institutions of higher learning, current events, news reports, published journal articles, textbooks, and marketing materials;

(C) list examples of primary, secondary, and tertiary drug information references;

(D) research and describe the history of pharmacy and contributions of the field;

(E) draw inferences based on data from promotional materials for products and services;

(F) analyze the societal impact of medication costs; and

(G) evaluate the impact of scientific research on society, including drug development and the natural environment, including drug disposal.

(2) The student identifies careers associated with pharmacology. The student is expected to:

(A) evaluate career pathways utilizing pharmacology;

(B) define the role of the pharmacy team; and

(C) research and describe emerging opportunities within the pharmacy profession.

(3) The student explains the ethical and legal responsibilities associated with pharmacology. The student is expected to:

(A) explain the causes, effects, and consequences associated with medical errors, including medication errors;

(B) define legal terminology associated with medical errors such as negligence, product liability, contributory negligence, and regulatory law;

(C) analyze the principles of medical ethics, including beneficence, autonomy, maleficence, and justice; and

(D) evaluate professional liability.

(4) The student uses medical terminology to communicate effectively with other healthcare professionals, patients, and caregivers. The student is expected to:

(A) use the appropriate medical terminology to identify different classes of drugs;

(B) communicate using medical terminology associated with pharmacology;

(C) analyze unfamiliar terms using the knowledge of word roots, suffixes, and prefixes; and

(D) interpret medical terminology to communicate with patients and caregivers.

(5) The student demonstrates mathematical knowledge and skills to solve problems with systems of measurement used in the pharmacy. The student is expected to:

(A) calculate medication dosages using formulas, ratios, proportions, and allegations;

(B) convert a measurement expressed in one standard unit within a system to a measurement expressed in another unit within the same system;

(C) convert a measurement expressed in one system to a unit of the same measurement in a different system, including metric, apothecary, avoirdupois, and household systems; and

(D) evaluate statistical data and its limitations such as patient compliance, study design, and controls.

(6) The student evaluates pharmaceutical agents, their dosage form, and routes of administration. The student is expected to:

(A) analyze the availability of different dosage forms such as solid, liquid, patch, and IV solution;

(B) give examples of the brand or generic names of drugs such as the top 200 drugs in each dosage form and routes of drug administration;

(C) define medical terminology associated with drug dosage forms;

(D) explain the difference between therapeutic effects, side effects, and toxic effects;

(E) identify the mechanism of action of different drug classifications such as drug receptors, agonists, and antagonist relationships;

(F) explain the dose response relationship concept such as the difference between oral and IV administration of drugs and explain the relationship between drug dosage, drug response, and time; and

(G) explain drug safety practices such as monitoring expiration dates and drug disposal.

(7) The student demonstrates knowledge and use of appropriate equipment, instruments, and technology. The student is expected to:

(A) identify technology components used in the pharmacy workflow such as ordering, entering, filling, and dispensing;

(B) describe how technology applications improve efficiency in the pharmacy; and

(C) identify and demonstrate proper use and maintenance of equipment and instruments used in a pharmacy setting such as IV drop sets, scales, glucose supplies, dispensing units or cabinets, and other laboratory supplies.

(8) The student practices safe protocols in preventing personal and client illness or injury. The student is expected to:

(A) employ safety standards such as workplace standards;

(B) interpret and apply pharmacy standards according to the strictest local, state, or federal regulations to enhance safety;

(C) examine the consequences of unsafe practices; and

(D) demonstrate safe procedures in the administration of client care in a simulated or clinical setting.

§127.486. Medical Microbiology (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: one credit in biology, one credit in chemistry, and at least one credit in a course from the health science career cluster. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for

students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Medical Microbiology course is designed to explore the microbial world, studying topics such as pathogenic and non-pathogenic microorganisms, laboratory procedures, identifying microorganisms, drug-resistant organisms, and emerging diseases.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as microscopes, slides, streak plates, inoculating loops, Bunsen burners, striker, hot plate, petri dish, agar and other growth mediums, reactive agents, personal protective equipment (PPE), disposable pipettes, lab glassware and instruments, bacterium and other live microbial agents, enzymes, computer software and probes, incubator, and autoclave;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using equipment such as graphing calculator, computer software and probes, graphic organizers;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) or health science field in order to investigate careers.

(5) The student examines the field of microbiology in relation to medical care. The student is expected to:

(A) examine the historical development of microbiology as it relates to health care of an individual in modern medicine; and

(B) compare the roles, functions, and responsibilities of agencies governing infectious disease control.

(6) The student is expected to perform and analyze results in the microbiology laboratory. The student is expected to:

(A) classify microorganisms using a dichotomous key;

(B) prepare slides and discuss the differences between Gram positive and Gram negative bacteria such as the bacterial cell wall and the use of oxygen;

(C) identify chemical processes such as enzyme catalyst and osmotic potential of microorganisms;

(D) identify and discuss technologies used in a laboratory setting such as polymerase chain reaction (PCR), serology, enzyme-linked immunoassay (ELISA), and electrophoresis;

(E) prepare plates or active mediums to differentiate the factors required for microbial reproduction and growth;

(F) identify the normal flora microorganisms of the human body;

(G) identify and differentiate between various pathogens, including opportunistic pathogens, hospital-acquired infections, community-acquired infections, and colonizing microorganisms;

(H) isolate colonies and describe the morphology of microorganisms; and

(I) interpret and explain the role of the culture and sensitivity report provided to the clinician.

(7) The student examines the role of microorganisms in infectious diseases. The student is expected to:

(A) outline and explain the infectious disease process, including how pathogenic microorganisms affect human body systems;

(B) categorize diseases caused by bacteria, including *Rickettsia*, fungi, viruses, protozoa, arthropods, and helminths;

(C) explain and interpret the body's immune responses and defenses against infection;

(D) prepare a bacterial colony and evaluate the effects of anti-microbial agents such as narrow and broad-spectrum antibiotics;

(E) examine the environmental and social causes of the emergence and reemergence of diseases such as corona viruses, Ebola, malaria, tuberculosis, and polio;

(F) research and discuss drug *aureus*-resistant microorganisms, including carbapenem-resistant *Enterobacteriaceae*, methicillin-resistant *Staphylococcus aureus*, vancomycin-intermediate/resistant *Staphylococci*, vancomycin-resistant enterococci, and emergent antibiotic-resistant superbugs; and

(G) outline the role of governing agencies in monitoring and establishing guidelines based on the spread of infectious diseases.

(8) The student recognizes the importance of maintaining a safe environment and eliminating hazardous situations. The student is expected to:

(A) identify and apply standard laboratory precautions;

(B) identify and apply microbiological safety practices in accordance with industry standards, including the proper handling, disinfection, and disposal of biological waste and maintenance of containment levels;

(C) identify and apply appropriate personal protection equipment (PPE) and transmission-based precautions, including precautions against droplet, contact, and airborne transmission;

(D) sterilize laboratory and medical equipment and instruments in accordance with industry standards; and

(E) define and select different mechanisms of decontamination such as antiseptics, disinfection, and sterilization.

§127.487. Health Informatics (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Medical Terminology. Recommended prerequisites: Principles of Health Science and Business Information Management I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-rele-

vant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Health Informatics course is designed to provide knowledge of one of the fastest growing areas in both academic and professional fields. Healthcare information technology has increased demand for information and health professionals who can effectively design, develop, and use technologies such as electronic medical records, patient monitoring systems, and digital libraries. This course will include a focus on billing and coding.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student interprets fundamental knowledge of concepts of health information systems technology and the tools for collecting, storing, and retrieving health care data. The student is expected to:

(A) discuss, define, and differentiate the common health information systems such as electronic medical records and electronic health records, practice management software, master patient index (MPI), patient portals, remote patient monitoring, and clinical decision support; and

(B) explain how various health information systems support the administrative, financial, clinical, and research needs of a health care enterprise.

(2) The student employs the various types of databases in relation to health informatics. The student is expected to:

(A) define the function of a database management system;

(B) identify the purpose of data modeling;

(C) define the customary steps in the data modeling process;

(D) differentiate between entities, attributes, and relationships in a data model; and

(E) explain various types of organizational databases.

(3) The student distinguishes between data and information. The student is expected to:

(A) discuss the importance of data security, accuracy, integrity, reliability, and validity; and

(B) demonstrate an understanding of data information concepts for health information systems, electronic health records, and patient registries.

(4) The student examines the evolution of the health information system. The student is expected to:

(A) evaluate the growing role of the electronic health record;

(B) review the progress of the development of the electronic health record;

(C) explain functional requirements for electronic health records; and

(D) explain the concept and importance of the interoperability of electronic health records and other health information systems.

(5) The student examines the process of medical diagnostic and coding concepts as well as current procedural practices. The student is expected to:

(A) examine Health Insurance Portability and Accountability Act (HIPAA) guidelines for confidentiality, privacy, and security of a patient's information within the medical record;

(B) differentiate between insurance fraud and insurance abuse;

(C) discuss the linkage between current procedural terminology (CPT) codes; International Classification of Diseases, 10th revision, Clinical Modification (ICD-10-CM) codes; and medical necessity for reimbursement for charges billed;

(D) search ICD-10-CM code system for correct diagnosis code using patient information;

(E) identify the two types of codes in the health care common procedure coding system (HCPCS); and

(F) explain how medical coding affects the payment process.

(6) The student identifies agencies involved in the health insurance claims process. The student is expected to:

(A) define fiscal intermediary;

(B) define Medicaid and Medicare;

(C) discuss health care benefit programs such as TRICARE and Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA);

(D) explain how to manage a worker's compensation case;

(E) complete a current health insurance claim form such as the Centers for Medicare and Medicaid Service (CMS-1500) form; and

(F) identify three ways to transmit electronic claims.

§127.488. Medical Billing and Coding (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Medical Terminology. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) Medical Billing and Coding familiarizes students with the process, language, medical procedure codes, requirements of Health Insurance Portability and Accountability Act (HIPAA), and skills they will need to make accurate records. Students will develop an understanding of the entire process of the revenue cycle and how to effectively manage it. The program is designed to prepare students for employment in a variety of health care settings as entry level coder, medical billing specialist, and patient access representative.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

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(1) The student explores career opportunities in revenue cycle management. The student is expected to:

(A) identify professional opportunities within the medical billing and revenue cycle management professions;

(B) demonstrate ethical billing and coding practices as outlined by professional associations guidelines; and

(C) investigate professional associations applicable to the field of health informatics such as American Academy of Professional Coders (AAPC), American Health Information Management Association (AHIMA), Healthcare Billing and Management Association (HBMA), and American Association of Healthcare Administrative Management (AAHAM).

(2) The student explains the ethical and legal responsibilities of personnel in medical billing and coding. The student is expected to:

(A) identify major administrative agencies that affect billing and coding such as Centers for Medicare and Medicaid Services (CMS) and the Office of the Inspector General (OIG);

(B) identify major laws and regulations that impact health information, including HIPAA, the Stark Law, the Fair Debt Collection Practices Act, and the False Claims Act;

(C) analyze legal and ethical issues related to medical billing and coding, revenue cycle management, and documentation within the medical record;

(D) research compliance laws;

(E) identify appropriate documentation required for the release of patient information;

(F) differentiate between informed and implied consent;

(G) compare and contrast use of information and disclosure of information; and

(H) evaluate cases for insurance fraud and abuse.

(3) The student identifies the body systems to support proficiency in billing and coding. The student is expected to:

(A) explain the sections and organizations of the International Classification of Diseases and Related Health Problems, 10th Revision, Clinical Modification (ICD-10-CM) and Current Procedural Terminology (CPT) coding manuals by identifying the anatomy and physiology of body systems and how they apply to medical billing and coding, including:

(i) the integumentary system;

(ii) the skeletal system;

(iii) the muscular system;

(iv) the cardiovascular system;

(v) the respiratory system;

(vi) the digestive system;

(vii) the endocrine system;

(viii) the urinary system;

(ix) the reproductive system; and

(x) the nervous system and special senses; and

(B) identify mental, behavioral, and neurodevelopmental disorders and how they apply to medical billing and coding.

(4) The student demonstrates proficiency in the use of the ICD-10-CM, CPT, and Healthcare Common Procedure Coding System (HCPCS) coding systems. The student is expected to:

(A) apply coding conventions and guidelines for appropriate charge capture;

(B) describe the process to update coding resources;

(C) assign and verify diagnosis and procedure codes to the highest level of specificity, and, as applicable, HCPCS level II codes and modifiers in accordance with official guidelines;

(D) describe the concepts of disease groupings and procedure-code bundling;

(E) identify coding compliance, including medical necessity; and

(F) use appropriate medical terminology and abbreviations.

(5) The student understands revenue cycle management. The student is expected to:

(A) define revenue cycle management;

(B) differentiate between various types of employer-sponsored and government-sponsored insurance models, including health maintenance organization (HMO), preferred-provider organization (PPO), Medicare, Medicaid, TRICARE, high deductible health plans, and workers' compensation;

(C) define Medicare Administrative Contractors (MACs) and investigate the administrative services provided by the MAC for Texas;

(D) describe the patient scheduling and check-in process, including verifying insurance eligibility, obtaining pre-autho-

rization, and processing appropriate patient authorization and referral forms;

(E) describe the sections of the CMS-1500 form to prepare and submit mock clean claims electronically or manually;

(F) differentiate between primary and secondary insurance plans to initially process crossover claims;

(G) interpret remittance advice to determine financial responsibility of insurance company and patient, including a cash-paying patient;

(H) analyze reason for insurance company denials or rejections and determine corrections or appeals required; and

(I) analyze an aging report and how it relates to the revenue cycle.

§127.489. Medical Assistant (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite or corequisite: Anatomy and Physiology. Recommended prerequisite: Medical Terminology. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostics services, health informatics, support services, and biotechnology research and development.

(3) The Medical Assistant course provides students with the knowledge and skills to pursue a career as a medical assistant and to improve college and career readiness. Students will obtain communication skills, clinical ethics knowledge, safety awareness, and information related to medical assisting career opportunities.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student evaluates the roles and responsibilities of the medical assistant as a member of the healthcare team. The student is expected to:

(A) explain the role of the medical assistant in various healthcare settings;

(B) discuss the scope of practice, including responsibilities and limitations of a medical assistant;

(C) explain the level of authority within the healthcare professional hierarchy; and

(D) identify the members of an interdisciplinary healthcare team and their roles such as licensed vocation nurse, registered nurse, primary care provider, specialists, and other allied health professionals.

(2) The student applies professional communication skills to provide information to patients and team members in a healthcare setting. The student is expected to:

(A) demonstrate the ability to report abnormal results in writing and orally to the patient's provider;

(B) demonstrate how to communicate with patients, caregivers, and the interdisciplinary team to assist in the planning, delivery, and coordination of patient-centered care;

(C) evaluate different communication techniques for responding to the needs of individuals in a diverse society;

(D) practice conflict-resolution techniques such as cooperation, contribution, compromise, and collaboration in various situations; and

(E) practice providing patient education on health-related topics such as clean catch urine collection, the risks and benefits of vaccinations, use of a peak-flow, and nebulizer treatments.

(3) The student demonstrates knowledge of healthcare ethical principles in their practice of medical assisting. The student is expected to:

(A) evaluate principles of ethical behavior, including beneficence, non-maleficence, justice, and autonomy;

(B) debate ethical issues related to technological advances in health care such as stem cells, robotics, and immunologic therapies in health care;

(C) evaluate ethical issues and legal ramifications related to malpractice, negligence, and liability; and

(D) summarize legal and ethical standards, including Patient Bill of Rights, Advanced Directives, and the Health Insurance Portability and Accountability Act (HIPAA).

(4) The student demonstrates knowledge of the administrative duties of a medical assistant in a healthcare setting. The student is expected to:

(A) identify considerations for scheduling a patient such as availability of test results, availability of staff, patient flow, triage, and coordination of care;

(B) discuss considerations related to managing an office schedule such as types of scheduling, under booking, over booking, cancellations, add-ons, and no-shows;

(C) define the terms used in medical billing such as diagnosis codes, billing codes, billing cycle, co-pay, deductibles, maximum out-of-pocket, and time of service;

(D) describe the elements of completing patient registration such as recording demographics, emergency contact, and insurance information;

(E) analyze different types of health insurance coverage, including Medicare, Medicaid, TRICARE, Civilian Health and Medical Program of the Department of Veterans Affairs (CHAMPVA), private insurance, employer-based insurance, and workers' compensation;

(F) identify the components of an insurance card such as plan name, group number, ID number, patient co-pay, co-insurance, and phone numbers;

(G) define insurance plan terminology such as prior authorization, formulary, explanation of benefits, denial, appeal, and referrals;

(H) define electronic health records systems and their components such as demographics, financial insurance information, orders and referrals, correspondence, and test results; and

(I) analyze the benefits and risks of electronic health records systems.

(5) The student uses appropriate medical terminology as a medical assistant. The student is expected to:

(A) use directional terms and anatomical planes related to body structure;

(B) use occupationally specific terms such as terms relating to the body systems, surgical and diagnostic procedures, diseases, and treatment; and

(C) apply knowledge of prefixes, suffixes, and root words to translate medical terms to conversational language to facilitate communication.

(6) The student practices or models patient intake skills as a medical assistant. The student is expected to:

(A) collect and document patient information during an intake interview, including chief complaint; patient care team; past medical, surgical, social, and family histories; patient allergies; and comprehensive medication list;

(B) explain how to use a medical chart to identify patient care needs;

(C) identify normal ranges for vital signs per age group, including blood pressure, temperature, heart rate, respiratory rate, and oxygen saturation;

(D) measure and record accurate vital signs, including manual blood pressure, temperature, heart rate, respiratory rate, and pain scale;

(E) measure and record accurate anthropometric measurements, including height, weight, and head circumference; and

(F) calculate accurate conversions between different units of measurement such as kilograms to pounds, centimeters to inches, and Fahrenheit to Celsius.

(7) The student demonstrates knowledge and application of point of care testing as a medical assistant. The student is expected to:

(A) define point of care testing;

(B) identify and correlate specimen types and collection methods, including throat swabs, capillary blood, and urine used in point of care testing;

(C) describe tests that might be performed as a point of care test in an office such as rapid strep, rapid flu, glucose, urine dip, urine pregnancy, vision screening, and electrocardiogram (EKG) tests;

(D) perform and document a vision screening using the Snellen eye chart; and

(E) locate landmarks for performing a 12-lead electrocardiogram (EKG).

(8) The student demonstrates knowledge of medication preparation and administration in a clinical setting specific to the role of a medical assistant. The student is expected to:

(A) apply the six rights of medication administration, including right patient, right medication, right dose, right time, right route, and right documentation;

(B) identify drug classifications and the indication for use;

(C) define drug-related terms, including adverse event, therapeutic response, side effect, drug interactions, and allergic reaction;

(D) calculate the amount of medication to administer based on the dosage ordered and the strength of medication supply on hand;

(E) evaluate a patient for known allergies and contraindications prior to administering any medication;

(F) identify routes of medication administration, including oral, buccal, sublingual, inhaled, intranasal, otic, ophthalmic, intravaginal, anal, topical, transdermal, intradermal, subcutaneous, intramuscular, intravenous, and intrathecal;

(G) use proper technique when preparing medications for administration, including injections, oral, sublingual, inhaled, otic, ophthalmic, and topical;

(H) use proper technique when administering medications, including injections, oral, sublingual, inhaled, otic, ophthalmic, and topical;

(I) identify appropriate muscle groups for intramuscular injections, including deltoid, vastus lateralis, and ventrogluteal;

(J) explain the factors that influence intramuscular injection site selection, including patient size, patient age, viscosity of medication, and muscular density;

(K) explain the factors that affect needle size and gauge selection, including medication viscosity, patient size, muscular density; and

(L) demonstrate knowledge of syringe styles and markings on various size syringes such as Luer Lock, oral, insulin, TB, 1ml, 3ml, 5ml, and 10ml syringes.

(9) The student demonstrates knowledge of collecting, labeling, storing, and transferring lab specimens. The student is expected to:

(A) identify how to properly store and transfer lab specimens such as blood, urine, fecal, and sputum samples;

(B) list the proper order of draw for blood collection tubes;

(C) select the proper collection tubes for specific types of blood tests such as complete blood count (CBC), comprehensive metabolic panel (CMP), and lipid panel;

(D) locate veins used for blood draws;

(E) demonstrate proper technique and post procedural care for veinous blood draws; and

(F) demonstrate proper labeling of lab specimens, including patient name, date of birth, source, date, time, and initials of collector.

(10) The student demonstrates knowledge of patient populations and their specific care considerations. The student is expected to:

(A) discuss and identify stages of development throughout a patient's lifespan;

(B) describe coping and defense mechanisms exhibited by patients such as emotion-focused behaviors, problem-focused behaviors, denial, displacement, intellectualization, projection, rationalization, and regression;

(C) identify and discuss end-of-life considerations such as advanced directives, power of attorney, stages of grief, and family support;

(D) practice appropriate methods of care for working with patients with mental, physical, and developmental disabilities;

(E) explain how socioeconomic factors such as income, transportation, access to community resources, employment, and education level can influence patient outcomes; and

(F) explain how various multicultural values can affect patient care decisions.

(11) The student demonstrates knowledge of safety practices and procedures as related to medical assisting. The student is expected to:

(A) employ standard precautions in a healthcare scenario;

(B) identify various modes of disease transmission, including vector borne, air borne, direct or indirect contact, and vehicle;

(C) distinguish between the types of isolation precaution signage used to address modes of disease transmission such as contact, droplet, and airborne;

(D) identify personal protective equipment (PPE);

(E) apply the knowledge of PPE used in various situations such as venipuncture, collecting a throat swab, or dipping urine;

(F) demonstrate proper putting on (donning) and removing (doffing) of PPE;

(G) define the use of a sharps container, biohazard container, shredding bin, and trash receptacle;

(H) practice safe handling of sharps such as not recapping after injection and prompt disposal in a sharps container;

(I) identify symptoms of anaphylaxis and the proper emergency response;

(J) explain storage requirements for medications, vaccines, and lab specimens;

(K) locate and use the safety data sheets (SDS) to retrieve information such as proper storage, clean up, and exposure response; and

(L) define and apply knowledge of medical asepsis.

§127.490. Respiratory Therapy I (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: At least one credit in a course from the health science career cluster. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) Respiratory Therapy I is a technical lab course that addresses knowledge and skills related to cardiopulmonary medicine. Respiratory therapists are specialized healthcare practitioners trained in cardiopulmonary medicine to work therapeutically with people suffering from cardiopulmonary diseases. Students will learn basic knowledge and skills performed by respiratory therapists using equipment such as: stethoscopes, sphygmomanometers, thermometers, pulse oximeters, oxygen delivery devices (nasal cannula, masks of various types), nebulizers, and airway clearance and hyperinflation therapy devices.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations, including:

(A) work-based experiences/learning; and

(B) volunteering/shadowing opportunities.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in respiratory therapy. The student is expected to:

(A) interpret complex technical material related to respiratory therapy;

(B) identify how race, culture, and religion impact patient care;

(C) solve mathematical calculations related to respiratory therapy; and

(D) summarize biological and chemical processes that maintain homeostasis.

(2) The student investigates the history and profession of respiratory therapy, including education and licensure. The student is expected to:

(A) analyze the advancement of respiratory therapy practices over time;

(B) summarize the roles of respiratory therapists in various settings; and

(C) identify academic requirements for respiratory therapist and professional advancement opportunities such as professional organizations, credentials, certifications, registrations, licensure, continuing education, and advanced degrees.

(3) The student applies regulatory and safety standards in a respiratory therapy setting. The student is expected to:

(A) identify and conform to regulations and guidelines from entities such as the World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), Occupational Safety and Health Administration (OSHA), U.S. Food and Drug Administration (FDA), The Joint Commission, the National Institute of Health (NIH), Texas Commission on Environmental Quality (TCEQ), Texas Department of State and Health Services (DSHS), and American Association for Respiratory Care (AARC);

(B) identify infection control standard and transmission-based precautions in the patient care setting, including hand hygiene, equipment sterilization, and the use of personal protective equipment (PPE); and

(C) identify industry safety standards, including standards for body mechanics, fire prevention, electrical safety, oxygen safety, and the handling of hazardous materials.

(4) The student investigates the structure and function of cardiopulmonary anatomy. The student is expected to:

(A) analyze the cardiovascular system, including ventricles, atrium, valves, blood vessels, nerves, blood flow, and cardiac conduction system;

(B) explain the respiratory system, including airways, trachea, lungs, and pulmonary vessels that aid the body in the exchange of gases;

(C) trace the blood flow through the cardiopulmonary system; and

(D) examine a variety of human diseases and disorders affecting the cardiopulmonary system such as chronic obstructive pulmonary disease (COPD), asthma, pneumonia, cystic fibrosis, and lung cancer.

(5) The student develops knowledge pertaining to respiratory therapy procedures. The student is expected to:

(A) demonstrate the use of breathing exercises for patients with cardiopulmonary disease such as pursed lipped breathing and diaphragmatic breathing;

(B) explain the use of hyperinflation and airway clearance therapies;

(C) explain the use of tracheostomy and endotracheal tubes and oral and nasal airway devices for assisted breathing;

(D) identify anatomy of the heart and lungs and proper endotracheal tube placement on X-ray;

(E) explain the use of oximetry and arterial blood-gases for patient assessment;

(F) identify and explain the use of the equipment for oxygen therapies such as nasal cannula, high flow nasal cannula, simple masks, air-entrainment masks, partial rebreather masks, and non-rebreather masks; and

(G) demonstrate the administration of oxygen therapy using oxygen concentrators and portable cylinders.

(6) The student recognizes cardiopulmonary pharmaceutical agents and safety and protocol measures. The student is expected to:

(A) identify medications used in respiratory therapy, including bronchodilators and inhaled corticosteroids;

(B) summarize indications, contraindications, and side effects of respiratory medications;

(C) discuss delivery of respiratory medications such as nebulizers and meter dose inhalers (MDI); and

(D) assess the impact of cardiopulmonary agents on vital signs.

(7) The student implements the knowledge and skills of respiratory therapy professionals in a laboratory setting. The student is expected to:

(A) demonstrate patient assessment of vital signs, including blood pressure, pulse, respiratory rate, temperature, oxygenation, and ventilation status;

(B) demonstrate patient positioning for respiratory comfort and procedures;

(C) demonstrate patient care techniques used in high stress respiratory therapy situations such as non-compliant, combative, and distressed patients;

(D) demonstrate correct cardiopulmonary resuscitation (CPR) and automated external defibrillator (AED) skills; and

(E) demonstrate therapeutic communication appropriate to the situation, including communication with individuals with language differences/barriers and sensory loss.

(8) The student evaluates ethical behavioral standards and legal responsibilities in the respiratory therapy profession. The student is expected to:

(A) examine legal and ethical behavior standards such as the Patient's Bill of Rights, advanced directives, and the Health Insurance Portability and Accountability Act (HIPAA);

(B) investigate and discuss the legal and ethical ramifications of unacceptable behavior in therapeutic practice;

(C) research and describe role of professional associations and regulatory agencies; and

(D) describe ethical dilemmas in health care.

§127.491. Respiratory Therapy II (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: Respiratory Therapy I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) Respiratory Therapy II is a technical lab course that addresses knowledge and skills related to critical care and cardiopulmonary medicine. Respiratory therapists are specialized healthcare practitioners trained in cardiopulmonary medicine to work therapeutically with people suffering from cardiopulmonary diseases. Students will learn advanced knowledge and skills performed by respiratory therapists using equipment such as stethoscopes, sphygmomanometers, thermometers, pulse oximeters and monitors, oxygen delivery devices (nasal cannula, masks of various types), nebulizers, airway clearance and hyperinflation therapy devices, spirometers, and intubation mannequin heads and equipment (endotracheal tubes, laryngoscopes, stylets).

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations, including:

(A) work-based experiences/learning; and

(B) volunteering/shadowing opportunities.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in respiratory therapy. The student is expected to:

(A) analyze complex technical material related to respiratory therapy;

(B) analyze how race, culture, and religion impact patient care;

(C) apply mathematical calculations related to respiratory therapy; and

(D) analyze biological and chemical processes that affect homeostasis in relation to cardiopulmonary diseases.

(2) The student applies safety standards for a respiratory therapy setting. The student is expected to:

(A) evaluate and apply standards and guidelines from entities, including the American Association for Respiratory Care (AARC), World Health Organization (WHO), Centers for Disease Control and Prevention (CDC), U.S. Food and Drug Administration (FDA), and Texas Commission on Environmental Quality (TCEQ), as they apply to cardiopulmonary diseases;

(B) demonstrate infection control standard and transmission-based precautions in the laboratory setting, including hand hygiene, equipment sterilization, and the use of personal protective equipment (PPE); and

(C) model industry safety standards, including standards for body mechanics, fire prevention, electrical safety, oxygen safety, and the handling of hazardous materials.

(3) The student explains the interactions between the cardiopulmonary and other body systems as they relate to wellness and diseases. The student is expected to:

(A) analyze the role of the autonomic nervous system in the regulation of the cardiopulmonary system as it pertains to health and illness;

(B) analyze the role of the urinary system in the regulation of the acid-base and fluid balance and in cardiopulmonary health and illness;

(C) investigate the interactions between body systems and cardiopulmonary diseases and disorders such as Guillain-Barré syndrome, Myasthenia Gravis, SARS-CoV-2 (Covid), Idiopathic Pulmonary Fibrosis (IPF), adult respiratory distress syndrome (ARDS), and congestive heart failure (CHF);

(D) differentiate between normal heart rhythms and common cardiac dysrhythmias such as ventricular fibrillation, ventricular tachycardia, and asystole attributed to malfunctions in other body systems; and

(E) discuss the role of respiratory therapists in the use of mechanical systems, including non-invasive and invasive mechanical ventilators and extracorporeal membrane oxygenation (ECMO), when the cardiopulmonary system fails.

(4) The student implements the knowledge and skills of a respiratory therapy professional used in a laboratory setting. The student is expected to:

(A) demonstrate breathing exercises commonly used for patients with cardiopulmonary disease;

(B) demonstrate airway management skills in a laboratory setting using equipment for intubation and airway maintenance such as endotracheal and tracheostomy tubes, endotracheal/tracheal suction catheters, laryngoscopes, bag valve mask devices, oral and nasal airways, tube fasteners, or tape;

(C) demonstrate airway clearance and hyperinflation therapies in a laboratory setting using equipment such as oscillating positive end pressure devices, high frequency chest wall oscillation devices, and an incentive spirometer;

(D) differentiate between normal lung and pathology in a chest X-ray;

(E) recognize typical and atypical arterial blood-gas values related to patient oxygenation and ventilation status;

(F) demonstrate the use of the oxygen therapy equipment such as nasal cannula, high flow nasal cannula, simple masks, air-entrainment masks, partial rebreather masks, non-rebreather masks, and non-invasive ventilators;

(G) demonstrate patient assessment methods, including inspection, auscultation, palpitation, and percussion;

(H) interpret and create a basic care plan for asthma and chronic obstructive pulmonary disease (COPD);

(I) demonstrate the role of a respiratory therapist during simulated emergency situations such as situations requiring a rapid response team and advanced cardiac life support; and

(J) describe the respiratory therapists' role in patient education regarding the disease process and proper use of medication and respiratory equipment.

(5) The student understands cardiopulmonary pharmaceutical agents and safety. The student is expected to:

(A) research and identify the application of medications used in respiratory therapy, including bronchodilators, inhaled corticosteroids, mucolytics, biologics, inhaled antibiotics, inhaled pulmonary vasodilators, and antivirals;

(B) evaluate indications, contraindications, and side effects of respiratory medications;

(C) demonstrate delivery methods of medication such as nebulizers and meter dose inhalers (MDI); and

(D) evaluate patient response to therapy before, during, and after respiratory treatments such as heart rate, blood pressure, respiration, and breath sounds.

(6) The student evaluates ethical behavioral standards and legal responsibilities in the respiratory therapy profession. The student is expected to:

(A) analyze legal and ethical scenarios as it relates to the Patient's Bill of Rights and the Health Insurance Portability and Accountability Act (HIPAA);

(B) evaluate the legal and ethical ramifications of unacceptable behavior in therapeutic practice; and

(C) describe ethical dilemmas in respiratory therapy such as advanced directives, palliative care, hospice, and end-of-life care.

(7) The student identifies academic preparation and skills necessary for employment in the field of respiratory therapy. The student is expected to:

(A) research and identify academic requirements for professional advancement such as credentials, certifications, licensure, registration, continuing education, and advanced degrees; and

(B) research and identify the path to obtain and maintain entry level licensure and credentialing.

§127.492. Healthcare Administration and Management (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Medical Terminology. Recommended prerequisites: Principles of Health Science and Business Information Management I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) Healthcare Administration and Management is designed to familiarize students with the concepts related to healthcare administration as well as the functions of management, including planning, organizing, staffing, leading, and controlling. Students will also demonstrate interpersonal and project-management skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates an understanding of the healthcare management concept. The student is expected to:

(A) define the term healthcare management;

(B) explain the roles and responsibilities of healthcare professionals, including the management functions of planning, organizing, staffing, leading, and controlling;

(C) explain how organizational behavior and teamwork in healthcare impact patient outcomes and effective day-to-day operations;

(D) explore and discuss the factors that influence healthcare management such as governmental regulations, payment models, employee turnover, and workforce shortages;

(E) define ethical workplace behavior and role play how to make ethical decisions; and

(F) explain how socially responsible management policies such as healthcare equity access, inclusion, and diversity policies are initiated and implemented.

(2) The student recognizes the business functions of healthcare systems. The student is expected to:

(A) differentiate among the major healthcare delivery systems such as hospitals, outpatient care facilities, community-based organizations, insurance companies, and pharmaceutical companies;

(B) define and discuss healthcare quality and quality improvement;

(C) specify various types of health information technology and discuss barriers to health information technology adoption;

(D) investigate healthcare financing models;

(E) explain the difference between and provide examples of healthcare revenues and healthcare expenses;

(F) define revenue-cycle management; and

(G) describe the roles of customer service and marketing in health care.

(3) The student evaluates ethical behavioral standards and legal responsibilities. The student is expected to:

(A) research and describe the role of professional associations and regulatory agencies;

(B) examine legal and ethical behavior standards such as Patient Bill of Rights, Advanced Directives, and the Health Insurance Portability and Accountability Act (HIPAA);

(C) investigate the legal and ethical ramifications of unacceptable behavior;

(D) identify examples of conflicts of interest; and

(E) differentiate between the concepts of fraud, waste, and abuse.

§127.493. Leadership and Management in Nursing (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2022-2023 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: one credit in biology, one credit in chemistry, and at least one credit in a course from the health science career cluster. Recommended prerequisite: Science of Nursing. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) This course is designed to explore leadership and management in nursing, studying topics such as ethics, educational levels, career paths, regulatory bodies, and personal and professional leadership skills.

(4) Students are encouraged to participate in extended learning experiences such as Health Occupations Students of America (HOSA), Skills USA, career and technical student organizations, and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the different educational levels of licensed nurses and applicable careers and career pathways. The student is expected to:

(A) compare the differences between the educational requirements and roles of a licensed vocational nurse and a registered nurse;

(B) diagram the educational requirements of a registered nurse, including diploma, associate degree, bachelor's degree, master's degree, and doctoral degree;

(C) identify the different specializations of a nurse with a master's degree such as family nurse practitioner, nurse informaticist, nurse midwife, and nurse educator;

(D) differentiate the roles of the Doctor of Philosophy (PhD) and the Doctor of Nursing Practice (DNP) prepared nurse; and

(E) develop a six-year career plan in nursing.

(2) The student understands the functions of leadership in nursing. The student is expected to:

(A) illustrate or diagram the relationship and progression within the hierarchy of nursing leadership;

(B) identify critical skills and competencies for each level in the hierarchy of nursing leadership;

(C) present and examine the impact of each level of nursing in the hierarchy of leadership; and

(D) investigate and analyze different leadership styles and how they are used in different situations.

(3) The student demonstrates personal and professional leadership qualities and competencies. The student is expected to:

(A) identify different personal growth practices such as self-reflection, introspection, self-care, and journaling;

(B) describe and demonstrate intrapersonal skills such as empathy, patience, risk-taking, confidence, integrity, personal values and ethics, punctuality, and goal setting;

(C) examine personal and professional values and ethics;

(D) research and develop a plan to coach and mentor others; and

(E) evaluate decision-making processes such as delegation, problem-solving processes such as conflict management, and processes to support patient satisfaction, patient safety, and patient advocacy.

(4) The student demonstrates the appropriate use of communication techniques. The student is expected to:

(A) examine communication platforms and apply the appropriate professional response in different mediums such as telephone, email, text, electronic health records, and face to face;

(B) demonstrate professional written and verbal communication skills for individuals and teams using communication tools such as Situation Background Assessment and Recommendation (SBAR) and Acknowledge Introduce Duration Explanation and Thank you (AIDET);

(C) determine appropriate communication methods for urgent, emergent, and non-urgent situations such as team strategies and tools to enhance performance and patient safety (TeamSTEPPS); and

(D) demonstrate receiving and giving constructive criticism.

(5) The student understands the definition and application of time management. The student is expected to:

(A) demonstrate how to create an agenda that prioritizes tasks, duties, and responsibilities that must be completed, including required meetings and communications;

(B) differentiate goals that advance professional growth and responsibility and non-professional goals;

(C) identify factors that inhibit the good use of time and apply strategies that mitigate the loss of time; and

(D) demonstrate how to manage long- and short-term personal and professional schedules by creating and updating a yearly calendar.

(6) The student understands how to build and manage interdisciplinary teams and facilitate teamwork. The student is expected to:

(A) define and explain the purpose of an interdisciplinary team and the role of each member;

(B) develop a plan for creating a team through team-building exercises, culture and climate awareness, and interpersonal skills;

(C) define and apply techniques to manage personal conflict within teams; and

(D) describe the stages of team evolution such as forming, storming, norming, performing, and transforming.

(7) The student understands regulatory agencies and boards and their related requirements. The student is expected to:

(A) identify the role and responsibility of the Board of Nursing, including establishing graduation and licensure requirements;

(B) identify federal, state, and local regulatory agencies such as local hospital boards, Health and Human Services, The Joint Commission, and Center for Medicare and Medicaid Services;

(C) define and identify the nursing scope of practice;

(D) compare the difference between a certification and licensure; and

(E) compare the role of the Board of Nursing and professional nursing organizations.

§127.553. Practicum in Health Science (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Health Science Theory and Biology. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) To pursue a career in the health care industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health care industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students recognize the employment opportunities, technology, and safety requirements of each system. Students are expected to apply the knowledge and skills necessary to pursue a health science certification or licensure through further education and employment.

(6) Professional integrity in the health care industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social sciences in health science. The student is expected to:

(A) interpret data from various sources in formulating conclusions;

(B) compile information from a variety of sources to create a technical report;

(C) plan, prepare, and deliver a presentation;

(D) examine the environmental factors that affect homeostasis;

(E) relate anatomical structure to physiological functions; and

(F) distinguish atypical anatomy and physiology in the human body systems.

(2) The student uses verbal and non-verbal communication skills. The student is expected to:

(A) accurately report information according to facility policies and procedures;

(B) demonstrate therapeutic communication skills to provide quality care; and

(C) employ therapeutic measures to minimize communication barriers.

(3) The student implements the knowledge and skills of a health care professional necessary to acquire and retain employment. The student is expected to:

(A) demonstrate proficiency in medical terminology and skills related to the health care of an individual;

(B) develop new problem-solving strategies based on previous knowledge and skills; and

(C) evaluate performance for continuous improvement and advancement in health care.

(4) The student employs ethical behavior standards and legal responsibilities. The student is expected to:

(A) identify individual ethical and legal behavior standards according to professional regulatory agencies; and

(B) research case studies related to unethical behavior in the health care industry.

(5) The student employs a safe environment to prevent hazardous situations. The student is expected to:

(A) integrate regulatory standards such as standard precautions and safe patient handling;

(B) evaluate hazardous materials according to the material safety data sheets; and

(C) apply principles of infection control and body mechanics in all aspects of the health care industry.

(6) The student explores the knowledge and skill levels necessary for advancing in the health science professions. The student is expected to:

(A) identify knowledge and skills that are transferable among health science professions; and

(B) research career pathways pertaining to the health care industry.

(7) The student implements skills in monitoring individual health status during therapeutic or diagnostic procedures. The student is expected to:

(A) identify care indicators of health status; and

(B) record health status according to facility protocol.

(8) The student recognizes the importance of participation in extended learning experiences. The student is expected to:

(A) participate in extended learning experiences such as community service, career and technical student organizations, and professional organizations; and

(B) create a plan of action targeting the career and technical student organization's community service goal.

§127.554. Extended Practicum in Health Science (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Health Science Career Cluster. Prerequisites: Health Science Theory and Biology. Corequisite: Practicum in Health Science. This course must be taken concurrently with Practicum in Health Science and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) The Extended Practicum in Health Science course is designed to give students practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) To pursue a career in the health science industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health science industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students should identify the employment opportunities, technology, and safety requirements of each system. Students are expected to apply the knowledge and skills necessary to pursue a health science career through further education and employment.

(6) Professional integrity in the health science industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) report information according to facility policies and procedures accurately;

(C) demonstrate therapeutic communication skills with increased fluency to provide quality care;

(D) analyze, interpret, and effectively communicate information, data, and observations;

(E) apply active listening skills to obtain and clarify information; and

(F) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace to prevent hazardous situations. The student is expected to:

(A) demonstrate an understanding of and follow workplace safety rules and regulations;

(B) implement regulatory standards such as standard precautions and safe patient handling with increased fluency;

(C) evaluate hazardous materials according to the material safety data sheets in a consistent manner; and

(D) apply principles of infection control and body mechanics in all aspects of the health care industry.

(4) The student understands the professional, ethical, and legal responsibilities in health science. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) implement individual ethical and legal behavior standards according to professional regulatory agencies;

(C) show integrity by choosing the ethical course of action when making decisions; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student implements the knowledge and skills of a health care professional necessary to acquire and retain employment. The student is expected to demonstrate proficiency in medical terminology and skills related to the health care of an individual.

(6) The student participates in a supervised health science experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised health science experience;

(B) develop advanced technical knowledge and skills related to a personal occupational objective;

(C) evaluate strengths and weaknesses in technical skill proficiency; and

(D) collect representative work samples.

§127.555. Practicum in Nursing (Two Credits), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, and at least one course in a Level 2 or higher course in the nursing science program of study. Recommended prerequisites: Science of Nursing, Medical Terminology, and Anatomy and Physiology. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Health Science Career Cluster focuses on planning, managing, and providing therapeutic services, diagnostic services, health informatics, support services, and biotechnology research and development.

(3) Practicum in Nursing is designed to give students practical applications of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) To pursue a career in the nursing industry, students should learn to reason, think critically, make decisions, solve problems, and communicate effectively. Students should recognize that quality health care depends on the ability to work well with others.

(5) The health care industry is comprised of diagnostic, therapeutic, health informatics, support services, and biotechnology research and development systems that function individually and collaboratively to provide comprehensive health care. Students recognize the employment opportunities, technology, and safety requirements of each system. Students are expected to apply the knowledge and skills necessary to pursue a health science certification or licensure through further education and employment.

(6) Professional integrity in the health care industry is dependent on acceptance of ethical and legal responsibilities. Students are expected to employ their ethical and legal responsibilities, recognize limitations, and understand the implications of their actions.

(7) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(8) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social sciences in nursing. The student is expected to:

(A) solve mathematical calculations appropriate to situations in a health-related environment;

(B) communicate using medical terminology;

(C) express ideas in writing and develop skills in documentation;

(D) interpret complex technical material related to the health science industry;

(E) summarize biological and chemical processes that maintain homeostasis;

(F) explain changes in body structure due to trauma and disease; and

(G) research the global impact of disease prevention and cost containment.

(2) The student models ethical behavior standards and legal responsibilities. The student is expected to:

(A) apply facility and industry standard policies and procedures, including the Health Insurance Portability and Accountability Act (HIPAA);

(B) research and present case studies related to legal and ethical issues in health care;

(C) recognize and analyze professional boundaries of patient relationships; and

(D) model safe practices, including infection control, proper body mechanics, and patient handling.

(3) The student explores the knowledge and skills of the nursing process for assessment. The student is expected to:

(A) perform and assess subjective data during a patient intake in a clinical or simulated setting by:

(i) performing a complete health history, including family and social data; and

(ii) assessing the chief complaint, history of present illness, past medical history, and a review of systems; and

(B) perform and assess objective data during a patient intake in a clinical or simulated setting by demonstrating:

(i) the skill of obtaining core vital signs;

(ii) the skill of obtaining and assessing height and weight and weight fluctuations; and

(iii) the performance of a head-to-toe physical assessment.

(4) The student explores the knowledge and skills of the nursing process for implementation or intervention. The student is expected to:

(A) demonstrate the proper use and application of medical equipment related to oxygen therapy, glucometers, pulse oximeters, catheters, incentive spirometers, mobility devices, patient handling devices, and electric hospital beds and chairs;

(B) demonstrate patient care, including care related to activities of daily living (ADL), patient positioning, patients' range of motion, basic first aid, patient transfers, and patient transport;

(C) demonstrate skills related to or acquire basic life support (BLS) certification as required by industry standards; and

(D) demonstrate the skills necessary to track nutrition and elimination such as input and output (I&O) and types of diets.

(5) The student explores the knowledge and skills of the nursing process of evaluation and re-evaluation. The student is expected to:

(A) compare normal and abnormal healthcare data;

(B) identify how to report trends and abnormal findings to appropriate personnel according to facility protocols; and

(C) explain the significance of abnormal findings.

(6) The student explores the knowledge and skills of the nursing process of documentation. The student is expected to:

(A) document objective data using medical terminology;

(B) document subjective data using medical terminology; and

(C) record documentation using various models such as Situation, Background, Assessment, and Recommendation (SBAR); Acknowledge, Introduce, Duration, Explanation, and Thank you (AIDET); and Subjective, Objective, Assessment Plan (SOAP).

(7) The student provides care for diverse populations such as persons from varying age groups and persons with physical limitations or mental health needs in clinical or simulated environment. The student is expected to:

(A) demonstrate appropriate usage of verbal and non-verbal communication techniques for providing care to persons from diverse populations; and

(B) apply appropriate techniques for assessments and care.

(8) The student is expected to provide culturally appropriate care. The student is expected to:

(A) use culturally appropriate verbal and non-verbal communication skills; and

(B) demonstrate patient interaction strategies for assessments and care.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

SUBCHAPTER K. HOSPITALITY AND TOURISM

19 TAC §§127.561 - 127.568, 127.600 - 127.603

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.561. Principles of Hospitality and Tourism (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Principles of Hospitality and Tourism introduces students to an industry that encompasses lodging, travel and tourism, recreation, amusements, attractions, and food/beverage operations. Students learn knowledge and skills focusing on communication, time management, and customer service that meet industry standards. Students will explore the history of the hospitality and tourism industry and examine characteristics needed for success in that industry.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses verbal and nonverbal communication to provide a positive experience for guests and employees. The student is expected to:

(A) develop and execute formal and informal presentations; and

(B) practice customer service skills.

(2) The student understands that personal success depends on personal effort. The student is expected to:

(A) demonstrate self-responsibility and self-management;

(B) explain the characteristics of personal values, ethics, and fundamental principles;

(C) display positive attitudes and good work habits;

(D) develop strategies for achieving accuracy; and

(E) develop organizational skills.

(3) The student develops an understanding of time management, decision making, and prioritization. The student is expected to:

(A) identify and apply effective practices for managing time;

(B) analyze the benefits of balancing career and home life;

(C) learn and apply steps in the decision-making process; and

(D) work independently.

(4) The student researches, analyzes, and explores lifestyle and career goals. The student is expected to:

(A) prioritize career goals and ways to achieve those goals in the hospitality and tourism industry;

(B) compare and contrast education or training and certifications needed for careers in the hospitality and tourism industry;

(C) examine related community service opportunities; and

(D) describe the components and importance of a career portfolio.

(5) The student uses technology to gather information. The student is expected to:

(A) understand the need for computer applications to perform workplace tasks;

(B) recognize that types of computerized systems are used to manage operations and guest services in the hospitality and tourism industry; and

(C) discuss why computerized systems are used in operations and guest services in the hospitality and tourism industry.

(6) The student demonstrates leadership, citizenship, and teamwork skills required for success. The student is expected to:

(A) develop team-building skills;

(B) develop decision-making and problem-solving skills;

(C) conduct and participate in effective meetings;

(D) identify leadership and teamwork qualities that create a pleasant working atmosphere; and

(E) identify community service activities related to the hospitality and tourism industry.

(7) The student explains how resources (employees, guests, and property) are managed to minimize losses or liabilities in the hospitality and tourism industry. The student is expected to:

(A) identify and explain job safety and security practices;

(B) recognize and implement the basics of sanitation;

(C) understand and demonstrate procedures for cleaning, sanitizing, and storing equipment and tools; and

(D) determine how environmental issues and trends affect the hospitality and tourism industry.

(8) The student explores the history of the hospitality and tourism industry. The student is expected to:

(A) examine the varied operations required within the hospitality and tourism industry;

(B) understand the job qualifications for various careers in the hospitality and tourism industry; and

(C) differentiate amongst lodging, travel and tourism, recreation amusements, attractions and resorts, and food and beverage service.

(9) The student demonstrates research skills applicable to the hospitality and tourism industry. The student is expected to:

(A) develop technical vocabulary of the hospitality and tourism industry;

(B) design a customized product for the hospitality and tourism industry; and

(C) identify local and regional trends and issues in the hospitality and tourism industry.

(10) The student understands the importance of customer service. The student is expected to:

(A) determine ways to provide quality customer service;

(B) analyze how guests are affected by employee attitude, appearance, and actions; and

(C) examine different types of service across the industry.

§127.562. Introduction to Culinary Arts (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Recommended prerequisite: Principles of Hospitality and Tourism. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Introduction to Culinary Arts will emphasize the principles of planning, organizing, staffing, directing, and controlling the management of a variety of food service operations. The course will provide insight into the operation of a well-run restaurant. Introduction to Culinary Arts will provide insight into food production skills, various levels of industry management, and hospitality skills. This is an entry level course for students interested in pursuing a career in the food service industry. This course is offered as a classroom and laboratory-based course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student gains academic knowledge and skills required to pursue the full range of career and postsecondary education opportunities within the restaurant food service industry. The student is expected to:

(A) organize oral and written information;

(B) compose a variety of written documents such as menus, presentations, and advertisements;

(C) calculate numerical concepts such as weights, measurements, and percentages;

(D) identify how scientific principles are used in the food service industry; and

(E) use mathematics and science knowledge and skills to produce quality food products.

(2) The student uses verbal and nonverbal communication skills to create, express, and interpret information to establish a positive work environment. The student is expected to:

(A) develop and deliver presentations;

(B) identify various marketing strategies used by the food service industry such as traditional and innovative marketing strategies;

(C) demonstrate proper techniques for answering restaurant phones;

(D) relate interpersonal communications such as verbal and nonverbal cues to enhance communication with coworkers, employers, customers, and clients; and

(E) demonstrate active listening skills to obtain and clarify information.

(3) The student solves problems using critical thinking, innovation, and creativity independently and in teams. The student is expected to:

(A) generate creative ideas to solve problems by brainstorming possible solutions; and

(B) employ critical-thinking and interpersonal skills to resolve conflicts with individuals such as coworkers, customers, clients, and employers.

(4) The student uses information technology tools specific to restaurant management to access, manage, integrate, and interpret information. The student is expected to:

(A) use information technology tools and applications to perform workplace responsibilities;

(B) demonstrate knowledge and use of point-of-sale systems; and

(C) evaluate Internet resources for information.

(5) The student understands roles within teams, work units, departments, organizations, and the larger environment of the food service industry. The student is expected to:

(A) explain the different types and functions of kitchen, front-of-the-house, and support roles;

(B) investigate quality-control standards and practices;

(C) differentiate between various styles of restaurant services such as table, buffet, fast food, fast casual, and quick service;

(D) illustrate various place settings using proper placement of dining utensils; and

(E) demonstrate the proper service techniques in food service operations.

(6) The student understands the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. The student is expected to:

(A) assess workplace conditions with regard to safety and health;

(B) analyze potential effects caused by common chemicals and hazardous materials;

(C) demonstrate first aid and cardiopulmonary resuscitation skills;

(D) apply safety and sanitation standards common to the workplace;

(E) research sources of food-borne illness and determine ways to prevent them;

(F) determine professional attire and personal hygiene for restaurant employees; and

(G) prepare for a state or national food sanitation certification or other appropriate certifications.

(7) The student uses leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. The student is expected to:

(A) apply team-building skills;

(B) apply decision-making and problem-solving skills;

(C) determine leadership and teamwork qualities to aid in creating a pleasant working atmosphere; and

(D) participate in community leadership and teamwork opportunities to enhance professional skills.

(8) The student knows and understands the importance of professional ethics and legal responsibilities within the food service industry. The student is expected to:

(A) demonstrate ethical reasoning in a variety of workplace situations in order to make decisions;

(B) interpret and explain written organizational policies and procedures to help employees perform their jobs; and

(C) develop guidelines for professional conduct.

(9) The student demonstrates an understanding that personal success depends on personal effort. The student is expected to:

(A) demonstrate a proactive understanding of self-responsibility and self-management;

(B) identify behaviors needed to be employable and maintain employment such as positive work ethics and positive personal qualities;

(C) identify and evaluate the effects of exercise, nutritional dietary habits, and emotional factors such as stress, fatigue, or anxiety on job performance;

(D) implement stress-management techniques; and

(E) follow directions and procedures independently.

(10) The student develops principles in time management, decision making, effective communication, and prioritization. The student is expected to:

(A) apply effective practices for managing time and energy;

(B) analyze various steps in the career decision-making process; and

(C) discuss the importance of balancing a career, family, and leisure activities.

(11) The student knows and understands the importance of employability skills. The student is expected to:

(A) demonstrate skills related to seeking employment in the food service industry;

(B) identify the required training and educational requirements that lead toward appropriate career goals;

(C) select educational and work history highlights to include in a career portfolio;

(D) create and update a personal career portfolio;

(E) recognize required employment forms and their functions such as I-9, work visa, W-4, and licensures to meet employment requirements;

(F) research the local and regional labor workforce market to determine opportunities for advancement;

(G) investigate professional development training opportunities to keep current on relevant trends and information within the industry; and

(H) recognize entrepreneurship opportunities.

(12) The student understands the use of technical knowledge and skills required to pursue careers in the restaurant food service industry, including knowledge of design, operation, and maintenance of technological systems. The student is expected to:

(A) define job-specific technical vocabulary;

(B) analyze customer comments to formulate improvements in services and products and training of staff;

(C) detail ways to achieve high rates of customer satisfaction;

(D) use different types of payment options to facilitate customer payments for services; and

(E) demonstrate technical skills used in producing quality food service.

(13) The student understands factors that affect the food service industry. The student is expected to:

(A) outline the history and growth of the food service industry;

(B) identify an entrepreneur who has made significant contributions to the food service industry; and

(C) explain cultural globalization and its influence on food.

(14) The student evaluates and determines equipment, ingredients, and procedures in a professional food setting. The student is expected to:

(A) identify the role of mise en place;

(B) identify and use large and small equipment in the professional food service setting;

(C) identify the types of knives and proper usage in a commercial kitchen;

(D) demonstrate proper knife safety, handling, cleaning, and storage;

(E) differentiate between different types of produce and identify factors such as grading, purchasing, storage, and usage;

(F) differentiate between dry goods and identify factors such as purchasing and storage;

(G) differentiate between proteins and identify factors such as types, grades, purchasing, and storage;

(H) describe the methods of cooking, including dry heat, moist heat, and combination heat; and

(I) differentiate between common baking methods and identify common ingredients used in baking.

§127.563. Culinary Arts (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Hospitality and Tourism and Introduction to Culinary Arts. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Culinary Arts begins with the fundamentals and principles of the art of cooking and the science of baking and includes management and production skills and techniques. Students can pursue a national sanitation certification or other appropriate industry certifications. This course is offered as a laboratory-based course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies advanced reading, writing, mathematics, and science skills for the food service industry. The student is expected to:

(A) compose industry appropriate documents such as purchasing specifications and purchase orders;

(B) comprehend a variety of texts such as operations and training manuals;

(C) calculate numerical concepts such as percentages and estimations in practical situations, including weight and measures;

(D) understand scientific principles used in culinary arts;

(E) read and comprehend standardized recipes;

(F) write and convert standardized recipes; and

(G) calculate and manage food costs.

(2) The student integrates listening, writing, and speaking skills using verbal and nonverbal communication to enhance operations, guest satisfaction, and professional development. The student is expected to:

(A) create formal or informal presentations;

(B) properly answer business phones;

(C) write instructions for a specific restaurant for a culinary procedure or the use of a piece of equipment; and

(D) attend and participate in an industry-focused staff meeting.

(3) The student demonstrates an understanding that personal success depends on personal effort. The student is expected to:

(A) demonstrate a proactive understanding of self-responsibility and self-management;

(B) explain the characteristics of personal values and principles;

(C) demonstrate positive attitudes and work habits;

(D) demonstrate exemplary appearance and personal hygiene; and

(E) identify and manage the effects of exercise, dietary habits, and emotional factors such as stress, fatigue, or anxiety on job performance.

(4) The student develops principles in time management, decision making, effective communication, and prioritization. The student is expected to:

(A) apply effective practices for managing time and energy; and

(B) analyze various steps in the decision-making process.

(5) The student researches, analyzes, and explores lifestyle and career goals. The student examines jobs available in the food service industry and accesses career opportunities. The student is expected to:

(A) research the major job duties and qualifications for various positions in the food service industry to facilitate selection of career choices in culinary arts;

(B) update a personal career portfolio;

(C) demonstrate proper interview techniques; and

(D) establish personal short- and long-term goals.

(6) The student understands factors that affect the food service industry. The student is expected to:

(A) research how historical and current trends in society affect the food service industry;

(B) identify global cultures and traditions related to food;

(C) research famous chefs from history; and

(D) summarize historical entrepreneurs who influenced food service in the United States.

(7) The student evaluates and determines equipment, ingredients, and procedures used in a professional food setting. The student is expected to:

(A) identify and demonstrate the role of mise en place in the professional food service setting;

(B) identify and use large and small equipment in a commercial kitchen;

(C) develop and practice food production and presentation techniques;

(D) identify and use the appropriate application of moist, dry, and combination cookery methods;

(E) demonstrate the preparation skills of items commonly prepared in food service operations such as breakfast cookery, salads and dressings, soups and sandwiches, stocks and sauces, appetizers, seafood, poultry, meat, pastas and grains, and fruits and vegetables; and

(F) demonstrate baking techniques such as yeast breads and rolls, quick breads, and desserts.

(8) The student understands the various food service operations such as quick service, fast casual, casual, fine dining, institutional, and beverage service. The student is expected to:

(A) explain quality customer service;

(B) demonstrate types of table setting, dining, and service skills;

(C) differentiate between service styles; and

(D) compare and contrast the roles of the front of the house and the back of the house in the various food service operations.

(9) The student uses technology and computer applications to manage food service operations. The student is expected to:

(A) use technology tools appropriate for the industry;

(B) operate technology applications to perform workplace tasks;

(C) explain and use point-of-sale systems in various food service operations;

(D) demonstrate knowledge in computer programs used for food management;

(E) evaluate information sources for culinary arts; and

(F) interpret data such as spreadsheets, databases, and sales reports.

(10) The student demonstrates leadership, citizenship, and teamwork skills required for success. The student is expected to:

(A) apply team-building skills;

(B) apply decision-making and problem-solving skills;

(C) determine leadership and teamwork qualities in creating a pleasant working atmosphere; and

(D) participate in community leadership and teamwork opportunities to enhance professional skills.

(11) The student explains how employees, guests, and property are protected to minimize losses or liabilities. The student is expected to:

(A) determine the basics of safety in culinary arts;

(B) assess workplace conditions and identify safety hazards;

(C) determine the basics of sanitation in a professional kitchen;

(D) determine proper receiving, storage, and distribution techniques;

(E) demonstrate proper cleaning of equipment and maintenance in the commercial kitchen;

(F) assess food hazards and determine ways to prevent food hazards; and

(G) prepare for a state or national food sanitation certification or other appropriate certifications.

(12) The student recognizes and models work ethics and legal responsibilities. The student is expected to:

(A) understand and comply with laws and regulations specific to the food service industry; and

(B) demonstrate a positive work ethic.

§127.564. Advanced Culinary Arts (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Culinary Arts. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Advanced Culinary Arts will extend content and enhance skills introduced in Culinary Arts by in-depth instruction of industry-driven standards in order to prepare students for success in higher education, certifications, and/or immediate employment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches, analyzes, and designs a path to achieve career goals. The student examines jobs available in the food service industry and accesses career opportunities. The student is expected to:

(A) demonstrate major duties and qualifications for all staff and managerial positions to facilitate selection of career choices in the food service industry;

(B) model proper interview techniques;

(C) critique personal and short-term goals; and

(D) create and update a career portfolio.

(2) The student explains how employees, guests, and property are protected to minimize losses or liabilities. The student is expected to:

(A) determine the basics of safety in culinary arts;

(B) assess workplace conditions and identify safety hazards;

(C) determine the basics of sanitation in a professional kitchen;

(D) determine proper receiving, storage, and distribution techniques;

(E) explain and demonstrate proper cleaning of equipment and maintenance of the commercial kitchen;

(F) assess food hazards and determine ways to prevent food hazards; and

(G) prepare for a state or national food sanitation certification or other appropriate certifications.

(3) The student evaluates global cuisines, including the culture, history, and indigenous ingredients to create international recipes. The student is expected to:

(A) replicate advanced moist and dry cooking techniques from global cuisines such as American regional, Latin American, European, Mediterranean, Middle Eastern, and Asian;

(B) synthesize indigenous ingredients from global cuisine to create innovative dishes; and

(C) justify the connection of flavor, texture, visual appeal, taste, and customer satisfaction on product development.

(4) The student demonstrates an understanding of sustainability in the restaurant industry and its local and global effect. The student is expected to:

(A) evaluate practices for water and energy conservation across the food service industry;

(B) identify waste management options to promote sustainability; and

(C) evaluate current sustainable food practices.

(5) The student demonstrates comprehensive protein product knowledge as it relates to flavor, texture, visual appeal, taste, and customer satisfaction and establishes quality standards. The student is expected to:

(A) assess grading and classifications;

(B) identify primal, sub-primal, and retail cuts;

(C) demonstrate fabrication techniques on proteins;

(D) evaluate purchasing practices according to various food service operations;

(E) model appropriate cooking methods for proteins; and

(F) evaluate appropriate cooking methods in regard to various protein selections.

(6) The student demonstrates comprehensive fish and shellfish product knowledge as it relates to flavor, texture, visual appeal, taste, and customer satisfaction and establishes quality standards. The student is expected to:

(A) categorize classifications of fish and shellfish;

(B) evaluate factors that influence seafood purchasing such as freshness, flavor, sustainability, and market conditions;

(C) demonstrate the ability to clean and fabricate round, flat, fin fish, and shellfish;

(D) model appropriate cooking methods for fish and shellfish; and

(E) evaluate the effects of cooking methods on product presentation.

(7) The student demonstrates comprehensive knowledge of fruits, vegetables, grains, herbs, spices, and other dry goods as related to presentation, flavor, texture, visual appeal, taste, and customer satisfaction and establishes quality standards. The student is expected to:

(A) compare types of commonly available produce;

(B) identify factors contributing to cost and quality such as seasonality, market volatility, and transportation;

(C) compare and contrast forms and use of produce such as fresh, frozen, canned, dried, and other classifications;

(D) model appropriate cooking methods for produce; and

(E) evaluate the effects of cooking methods on produce.

(8) The student understands advanced baking and pastry principles. The student is expected to:

(A) use professional food preparation equipment such as commercial-grade mixers, food processors, and measuring tools;

(B) apply proper measuring and scaling techniques; and

(C) compose various plated desserts appropriate for various food service operations.

(9) The student demonstrates and practices the basic procedures for the production of yeast and quick bread products. The student is expected to:

(A) differentiate how various types of bread crusts are created through fermentation, proofing, baking temperatures, and humidity;

(B) prepare soft, hard, and artisanal breads through proper baking techniques; and

(C) differentiate between quick breads such as muffins, scones, and biscuits.

(10) The student demonstrates and practices the basic procedures for the production of pastry crust, pastry dough, and cookie. The student is expected to:

(A) compare different types of pastry crusts and usage in pies and tarts;

(B) prepare pie fillings such as fruit, soft, and custard fillings;

(C) prepare different types of pastry dough such as Pate a Choux, Pate Sucree, and laminated dough;

(D) differentiate between various cookie preparation methods;

(E) determine the causes of crispness, moistness, chewiness, and the spread of cookies; and

(F) bake, cook, and store cookies properly.

(11) The student demonstrates and practices the basic procedures for the production of cakes, frostings, fillings, and icings. The student is expected to:

(A) differentiate between cake preparation methods;

(B) differentiate the functions of icings and determine appropriate application;

(C) assemble and ice simple layer cakes, sheet cakes, and cupcakes;

(D) demonstrate the ability to identify criteria for evaluation of cake products;

(E) prepare various icings such as fondant, buttercreams, flat, royal, and glazes; and

(F) perform basic piping skills with a parchment cone and pastry bag with tips.

(12) The student demonstrates and practices the basic procedures for the production of custards, creams, and mousse. The student is expected to:

(A) compose desserts such as ice creams, custards, mousse, and other desserts; and

(B) identify the roles of desserts such as ice creams, custards, mousse, and other desserts.

(13) The student demonstrates and practices the basic procedures for the production of chocolate, sugars, confections, and sauces. The student is expected to:

(A) differentiate between the types of advanced confections;

(B) model methods of preparation in each type of confection;

(C) use chocolate as a major ingredient in dessert or food production;

(D) temper chocolate;

(E) use tempered chocolate in dessert preparation;

(F) cook sugar syrups to various stages of hardness;

(G) prepare dessert sauces such as custard, chocolate, caramel, fruit fillings, and coulis; and

(H) serve attractively plated desserts with appropriate sauces and garnishes.

(14) The student evaluates nutrition concepts as they affect health and wellness, marketing, and menu planning. The student is expected to:

(A) analyze the role of carbohydrates, vitamins, minerals, proteins, and fats as they relate to food choices; and

(B) research and develop menus for populations with dietary requirements or restrictions.

(15) The student analyzes the components of cost controls in a food service operation and develops a plan to manage cost. The student is expected to:

(A) differentiate between the major costs in food service such as food, beverage, and labor costs;

(B) validate the effect of controlling costs on the success of a food service operation;

(C) compare and contrast the concept of fixed costs, variable costs, and controllable costs; and

(D) compare and contrast the relationship between inventory management and cost control in food service operations.

§127.565. Food Science (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, and at least one credit in a Level 2 or higher course from the hospitality and tourism or agriculture, food, and natural resources career clusters. Recommended prerequisite: Principles of Hospitality and Tourism. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) In Food Science, students examine the nature and properties of foods, food microbiology, and the principles of science in food production, processing, preparation, and preservation; use scientific methods to conduct laboratory and field investigations; and make informed decisions using critical thinking and scientific problem solving. This course provides students a foundation for further study that leads to occupations in food and beverage services; the health sciences; agriculture, food, and natural resources; and human services.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as calculators, spreadsheet software, data-collecting probes, computers, standard laboratory glassware, microscopes, various prepared slides, metric rulers, electronic balances, hand lenses, Celsius thermometers, hot plates, lab notebooks or journals, timing devices, cameras, Petri dishes, lab incubators, and models, diagrams, or samples of biological specimens or structures, vacuum sealer, oven, cook top, cookware, bakeware, cutlery, and measuring cups and spoons;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using lab reports, labeled drawings, graphic organizers, journals, summaries, oral reports, and technology-based reports;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics or food science field.

(5) The student analyzes household and commercial sustainability and regulatory practices in food production. The student is expected to:

(A) research and investigate resource use, sustainability, and conservation in food production such as with water, land, and oceans;

(B) analyze the effect of food on the decomposition cycle, including composting, recycling, and disposal; and

(C) demonstrate appropriate methods for sorting and disposing of food waste, including fats and oils, and packaging waste from food production.

(6) The student analyzes the role of acids and bases in food science. The student is expected to:

(A) evaluate physical and chemical properties of acids and bases; and

(B) analyze the relationship of pH to the properties, safety, and freshness of food.

(7) The student evaluates the principles of microbiology and food safety practices. The student is expected to:

(A) investigate the properties of microorganisms that cause food spoilage;

(B) compare food intoxication and food infection;

(C) examine methods to destroy or inactivate harmful pathogens in foods;

(D) compare beneficial and harmful microorganisms, including lactic acid bacteria, acetic acid bacteria, various baking and brewing yeasts, *E. coli*, *Staphylococcus*, *Clostridium botulinum*, *Clostridium perfringens*, *Salmonella*, *Listeria*, and *Shigella*;

(E) analyze sanitary food-handling practices such as personal hygiene or equipment sanitation; and

(F) prepare for a state or national food manager sanitation certification or alternative credential within the field of food science technology.

(8) The student examines the chemical properties of food. The student is expected to:

(A) describe acids, bases, salts, carbohydrates, lipids, proteins and other elements, compounds, and mixtures related to food science;

(B) compare heterogeneous and homogeneous mixtures;

(C) analyze chemical and physical changes in food; and

(D) use chemical symbols, formulas, and equations in food science such as oxidation of sugars in a cut apple or fermentation in the production of yogurt.

(9) The student analyzes solutions, colloids, solids, gels, foams, and emulsions in food science. The student is expected to:

(A) identify the solvent and solute in various solutions such as brines;

(B) compare unsaturated, saturated, and supersaturated solutions, including their effects on boiling and freezing points in food preparation such as when making candy or ice cream;

(C) calculate the concentration of a solution using mass percent such as the concentration of sugar needed for crystallization;

(D) describe the properties of colloidal dispersions such as gelatin, mayonnaise, or milk;

(E) differentiate between and give examples of temporary, semi-permanent, and permanent emulsions;

(F) investigate the relationships between the three parts of a permanent emulsion; and

(G) create temporary, semi-permanent, and permanent food emulsions.

(10) The student analyzes the functions of enzymes in food science. The student is expected to:

(A) describe the role of enzymes as catalysts in chemical reactions of food, including cheese-making, the enzymatic tenderization of meat, and oxidation of sugars in fruit;

(B) explain the relationship between an enzyme and a substrate;

(C) analyze the functions of enzymes in digestion, including the factors that influence enzyme activity, and relate enzymatic activity in digestion to dietary restrictions; and

(D) analyze enzyme reactions in food preparation, including cheese-making, the enzymatic tenderization of meat, and oxidation of sugars in fruit.

(11) The student evaluates the role of fermentation in food science. The student is expected to:

(A) analyze modern and historical reasons food is fermented;

(B) describe the conditions under which bacterial fermentation of food occurs and use chemical equations to describe the products of fermentation; and

(C) prepare various fermented food products.

(12) The student assesses the reaction of leavening agents in baked products. The student is expected to:

(A) describe the physical and chemical changes that occur in leavening;

(B) identify various leavening agents and describe their functions in food production;

(C) use chemical equations to describe how acids act as leavening agents;

(D) conduct laboratory experiments with various types and amounts of leavening agents to compare the doughs and batters produced; and

(E) create baked products using various leavening agents.

(13) The student explores the roles of food additives. The student is expected to:

(A) evaluate the various types of food additives such as incidental, intentional, natural, and artificial;

(B) investigate the various functions of food additives such as preserving food, increasing nutritive value, and enhancing sensory characteristics; and

(C) research local, state, national, and international agencies involved in regulating food additives.

(14) The student analyzes the effects of heat energy transfer in food production. The student is expected to:

(A) analyze the relationship between molecular motion and temperature;

(B) compare heat transfer processes, including conduction, convection, and radiation;

(C) investigate the role of phase changes in food production, including crystallization, coagulation, and reduction; and

(D) demonstrate rates of reaction using various temperatures and describe the effects of temperature on the characteristics of food products.

(15) The student evaluates the properties of carbohydrates in food and their effects on food production. The student is expected to:

(A) identify the physical properties and chemical structures of simple and complex carbohydrates;

(B) describe the functions of carbohydrates such as caramelization, crystallization, and thickening agents in food production;

(C) describe the processes of gelatinization and retrogradation in food production; and

(D) create food products using simple and complex carbohydrates.

(16) The student evaluates the properties of fats in food and their effects on food production. The student is expected to:

(A) identify the physical properties and chemical structures of saturated and unsaturated fats;

(B) describe the functions of different types of fats in food production;

(C) demonstrate methods for controlling fat oxidation;

(D) analyze the effects of temperature on fats in food preparation;

(E) conduct laboratory experiments using the scientific processes to explore the functions of fats in food production; and

(F) create food products using saturated and unsaturated fats.

(17) The student evaluates the properties of proteins and their effects on food production. The student is expected to:

(A) identify the physical properties and chemical structures of proteins;

(B) explain the processes of protein denaturation, coagulation, and syneresis;

(C) describe the functions and uses of proteins such as in emulsions, foams, and gluten formation;

(D) analyze the effects of moisture and temperature on protein in food production such as moist and dry heat methods for preparation; and

(E) create food products using protein.

(18) The student evaluates the properties of vitamins and minerals and their interrelationships in food production. The student is expected to compare the effects of food production on water- and fat-soluble vitamins and minerals.

(19) The student evaluates the properties of water and their effects on food production. The student is expected to:

(A) identify the properties of water, including as a solvent or medium, and its effects on food production; and

(B) compare the effects of hard and soft water on food production.

(20) The student explains nutritional aspects of food production. The student is expected to:

(A) describe how variations in human digestion and metabolism affect dietary modifications;

(B) identify common and special dietary modifications such as for food allergies, intolerances, or medical conditions;

(C) develop and modify recipes for dietary differences such as allergies and intolerances or for personal health preferences such as low-fat or sugar-free; and

(D) plan and create a dining experience using the most recent USDA dietary guidelines.

(21) The student analyzes processes that manage bacteria to safe levels during food production. The student is expected to investigate processes that manage food bacteria such as dehydration, pasteurization, and food irradiation.

(22) The student examines packaging and labeling guidelines. The student is expected to:

(A) research and evaluate federal food packaging regulations, including the information required on a food label;

(B) compare global food packaging regulations to those of the United States; and

(C) analyze the effectiveness of commercial food packaging for specific foods.

(23) The student analyzes food preservation processes. The student is expected to:

(A) describe the benefits of food preservation;

(B) compare various methods of household and commercial dehydration, canning, and freezing; and

(C) create a food product using a selected preservation method.

§127.566. Travel and Tourism Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Hospitality and Tourism. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events and travel-related services.

(3) Travel and Tourism Management incorporates management principles and procedures of the travel and tourism industry as well as destination geography, airlines, international travel, cruising, travel by rail, lodging, recreation, amusements, attractions, and resorts. Employment qualifications and opportunities are also included in this course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) select and employ verbal skills when obtaining and conveying information;

(B) use verbal and nonverbal communication skills effectively with diverse constituents;

(C) develop and deliver presentations using appropriate technology such as to engage, inform, and persuade audiences; and

(D) compose a variety of written documents used in travel and tourism such as itineraries, thank you letters, presentations, and advertisements.

(2) The student solves problems independently and in teams using critical-thinking skills. The student is expected to:

(A) generate creative ideas by brainstorming possible solutions;

(B) guide individuals through the process of making informed travel decisions;

(C) interpret and use industry standards for principles of budgeting and forecasting to maximize profit and growth;

(D) analyze customer comments to formulate improvements in services and products; and

(E) summarize how to use the state of the economy to plan products and services.

(3) The student uses information technology tools specific to the travel and tourism industry to access, manage, integrate, and create information. The student is expected to:

(A) operate and use technological applications to communicate within a workplace and perform a task;

(B) distinguish among the different modes of travel such as airline, cruise line, road travel, and rail;

(C) differentiate among recreation such as amusement, attractions, and resort venues;

(D) research travel arrangement systems used for booking reservations; and

(E) create basic multimedia publications.

(4) The student understands roles within teams, work units, departments, organizations, inter-organization systems, and the larger environment of the travel and tourism industry. The student is expected to:

(A) explain the functions and interactions of various departments within a travel and tourism business;

(B) research quality-control systems and practices;

(C) develop plans to accomplish organizational goals; and

(D) formulate collaborative plans with other related industries such as lodging, food and beverage service, and transportation agencies to provide an all-inclusive product for the customer.

(5) The student understands the importance of health, safety, and environmental systems in the travel and tourism industry and their importance to organizational performance and regulatory compliance. The student is expected to:

(A) identify hazards common to workplaces such as safety, health, and environmental hazards;

(B) use industry standards to implement safety precautions to maintain a safe worksite;

(C) research and relate first aid and cardiopulmonary resuscitation skills;

(D) describe environmental procedures that ensure a facility is in compliance with health codes;

(E) describe how to train others for emergency situations;

(F) analyze potential effects caused by common chemicals and hazardous materials; and

(G) compare and contrast security measures to protect the guests, staff, and property.

(6) The student uses leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. The student is expected to:

(A) apply team-building skills;

(B) apply decision-making and problem-solving skills;

(C) apply teamwork qualities in creating a pleasant work environment;

(D) determine the impact of cultural diversity on teamwork; and

(E) participate in community service opportunities.

(7) The student knows and understands the importance of professional ethics and legal responsibilities. The student is expected to:

(A) discuss ethical reasoning to a variety of workplace situations in order to make decisions; and

(B) research information on organizational policies in handbooks and manuals.

(8) The student knows and understands the importance of employability skills and is able to explore and effectively plan for managing travel and tourism careers. The student is expected to:

(A) identify and demonstrate behaviors and skills necessary to be employable;

(B) identify the training and education requirements that lead toward an appropriate certification for employment;

(C) demonstrate proper interview techniques;

(D) update or create a career portfolio;

(E) investigate continuing education opportunities within the industry;

(F) examine appropriate credentialing requirements to maintain compliance with industry requirements;

(G) compare and contrast the effect of stress, fatigue, and anxiety on job performance;

(H) complete required employment forms such as I-9, work visa, W-4, and licensures to meet employment requirements; and

(I) explore entrepreneurship opportunities within the travel and tourism industry.

(9) The student develops principles in time management, decision making, effective communication, and prioritizing. The student is expected to:

(A) apply effective practices for time management;

(B) analyze various steps in the decision-making process for prioritizing effectively; and

(C) discuss the importance of balancing a career, a family, and leisure activities.

(10) The student uses technical knowledge and skills required in the travel and tourism industry. The student is expected to:

(A) develop job-specific technical vocabulary;

(B) use marketing techniques to sell products and services;

(C) evaluate current and emerging technologies to improve guest services;

(D) explain different types of payment options;

(E) analyze customer service concepts and scenarios;

(F) describe how customer service affects a company's bottom line;

(G) develop an awareness of cultural diversity to enhance travel planning such as differences in social etiquette, dress, and behaviors;

(H) demonstrate an understanding of tourism sales and the impact on distribution systems;

(I) demonstrate knowledge of destination, attraction planning, and development, including the use of organizations such as convention and visitor's bureaus and state tourist boards; and

(J) investigate geography and factors that affect the travel and tourism industry.

§127.567. Hotel Management (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Hospitality and Tourism. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Hotel Management focuses on the knowledge and skills needed to pursue staff and management positions available in the hotel industry. This in-depth study of the lodging industry includes departments within a hotel such as front desk, food and beverage, housekeeping, maintenance, human resources, and accounting. This course will focus on, but not be limited to, professional communication, leadership, management, human resources, technology, and accounting.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses verbal and nonverbal communication skills to create, express, and interpret information for providing a positive experience for guests and employees. The student is expected to:

(A) develop, deliver, and critique presentations;

(B) analyze various marketing strategies for a lodging property and available services;

(C) demonstrate proper techniques for using telecommunications equipment;

(D) interpret verbal and nonverbal cues to enhance communication with individuals such as coworkers, guests, and clients;

(E) locate written information used to communicate with individuals such as coworkers and guests;

(F) apply and model active listening skills to obtain and clarify information; and

(G) follow directions and procedures independently and in teams.

(2) The student solves problems independently and in teams using critical thinking, innovation, and creativity. The student is expected to:

(A) generate creative ideas to solve problems by brainstorming possible solutions;

(B) employ critical-thinking and interpersonal skills to resolve conflicts with individuals such as coworkers, employers, guests, and clients; and

(C) interpret and use industry standards for principles of budgeting and forecasting to maximize profit and growth.

(3) The student demonstrates an understanding that personal success depends on personal effort. The student is expected to:

(A) demonstrate an understanding of self-responsibility and self-management;

(B) identify and demonstrate both positive and negative work behaviors and personal qualities for employability; and

(C) evaluate the effects of health and wellness on employee performance.

(4) The student develops principles in time management, decision making, effective communication, and prioritization. The student is expected to:

(A) apply effective practices for managing time and energy;

(B) develop and implement stress-management techniques;

(C) assemble and analyze the various steps in the decision-making process; and

(D) evaluate the importance of balancing a career, family, and leisure activities and develop various techniques to reduce conflict.

(5) The student understands the importance of employability skills. The student is expected to:

(A) assemble the required training or education requirements that lead to an appropriate industry certification;

(B) comprehend and model skills related to seeking employment;

(C) assemble and/or update an electronic personal career portfolio;

(D) complete a job application in written and electronic format;

(E) examine and model proper interview techniques in applying for employment;

(F) complete required employment forms such as I-9, work visa, W-4, and licensures to meet employment requirements;

(G) research the local labor workforce market to determine opportunities for lodging employment; and

(H) investigate professional lodging organizations and development training opportunities to keep current on relevant trends and information within the lodging industry.

(6) The student understands roles within teams, work units, departments, organizations, and the larger environment of the lodging industry. The student is expected to:

(A) identify lodging departments and distinguish among the duties and responsibilities within each department;

(B) implement quality-control standards and practices;

(C) compare and contrast duties and responsibilities from each department to the larger lodging environment, including food and beverage services;

(D) identify, compare, and contrast all types of lodging properties;

(E) compare and contrast lodging revenue and support centers;

(F) compare and contrast chain and franchise lodging properties;

(G) create, design, and present lodging entrepreneurship opportunities; and

(H) comprehend and model professional attire.

(7) The student uses information technology tools specific to lodging management to access, manage, integrate, and create information. The student is expected to:

(A) use information technology tools to evaluate lodging work responsibilities;

(B) evaluate technology tools to perform workplace tasks;

(C) understand and evaluate the hotel/guest cycle with applicable technology;

(D) prepare and present complex multimedia publications;

(E) demonstrate knowledge and use of point-of-sale systems;

(F) evaluate Internet resources for industry information; and

(G) evaluate current and emerging technologies to improve guest services.

(8) The student uses leadership and teamwork skills in collaborating with others to accomplish organizational goals and objectives. The student is expected to:

(A) differentiate types of effective leadership and management styles and select which management style is effective for the lodging industry;

(B) apply team-building skills;

(C) apply decision-making and problem-solving skills;

(D) apply leadership and teamwork qualities in creating a pleasant working atmosphere; and

(E) participate in community leadership and teamwork opportunities to enhance professional skills.

(9) The student understands the importance of health, safety, and environmental management systems in organizations and their importance to organizational performance and regulatory compliance. The student is expected to:

(A) assess workplace conditions with regard to safety and health;

(B) apply safety and sanitation standards common to the workplace;

(C) analyze potential effects caused by common chemical and hazardous materials;

(D) demonstrate first aid and cardiopulmonary resuscitation skills;

(E) research sources of food-borne illness and determine ways to prevent them; and

(F) evaluate the need for personal hygiene and correlate this to the importance of health, safety, and environmental management systems in the organization.

(10) The student knows and understands the importance of professional ethics and legal responsibilities within the lodging industry. The student is expected to:

(A) demonstrate professional and ethical standards;

(B) compare and contrast the rights of the innkeeper and the rights of the guest; and

(C) interpret and explain written organizational policies and procedures to help employees perform their jobs.

(11) The student understands the knowledge and skills required for careers in the lodging industry. The student is expected to:

(A) develop job-specific technical vocabulary;

(B) explain procedures to meet guest needs, including guest registration, rate assignment, room assignment, and determination of payment methods;

(C) differentiate the functions of meeting and event planning and how they correlate to the individual lodging property; and

(D) understand the importance of check-out procedures to ensure guest satisfaction and verify settlement of account.

§127.568. Hospitality Services (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisites: Principles of Hospitality and Tourism, Hotel Management, and Travel and Tourism Management. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Hospitality Services provides students with the academic and technical preparation to pursue high-demand and high-skill careers in hospitality related industries. The knowledge and skills are acquired within a sequential, standards-based program that integrates hands-on and project-based instruction. Standards included in the Hospitality Services course are designed to prepare students for nationally recognized industry certifications, postsecondary education, and entry-level careers. In addition, Hospitality Services is designed so that performance standards meet employer expectations, enhancing the employability of students. Instruction may be delivered through laboratory training or through internships, mentoring, or job shadowing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses communication skills in the creation, expression, and interpretation of information and ideas. The student is expected to:

(A) interpret communication such as verbal and nonverbal;

(B) recognize and respond to guest needs;

(C) develop listening skills to accurately process messages for guests;

(D) exhibit public relations skills; and

(E) recognize alternate communication services to assist customers with specialized needs.

(2) The student researches career opportunities and qualifications to broaden awareness of careers available in the hospitality industry. The student is expected to:

(A) outline a plan for an effective job search, including developing a resume;

(B) demonstrate flexibility to learn new knowledge and skills;

(C) prioritize work responsibilities and life responsibilities;

(D) develop an electronic career portfolio;

(E) compare and contrast personal strengths and weaknesses that may determine individual potential for growth within the hospitality industry;

(F) explain what is needed to achieve job advancement;

(G) understand the role of professional organizations or industry associations;

(H) research the procedures for licensure, certification, or credentials for a chosen occupation;

(I) analyze future employment outlooks;

(J) demonstrate appropriate business and personal etiquette;

(K) develop a written organizational policy to ensure successful hospitality operations such as guest satisfaction and employee success; and

(L) research the major duties and qualifications for hospitality managerial positions.

(3) The student reviews ethical and legal responsibilities or related conduct toward guests and employees within the establishment to maintain high industry standards. The student is expected to:

(A) examine laws regarding hiring, harassment, and safety issues;

(B) compare and contrast legal responsibilities and employer policies; and

(C) discuss ethical dilemmas.

(4) The student uses information technology tools specific to hospitality service careers to access, manage, integrate, or create information. The student is expected to:

(A) examine types of technology used to manage hospitality service operations;

(B) research website information on hospitality service operations; and

(C) evaluate current and emerging technologies provided by the hospitality industry.

(5) The student applies leadership, teamwork, and critical-thinking skills in collaboration with others to accomplish organizational goals or objectives. The student is expected to:

(A) demonstrate qualities that contribute to employee retention;

(B) formulate staff training plans to create an effective working team;

(C) evaluate methods of conflict-management skills to facilitate appropriate solutions;

(D) resolve unexpected situations in customer service;

(E) understand diverse employee cultures and customs; and

(F) value cultural diversity of guests.

(6) The student applies marketing strategies independently and in teams. The student is expected to:

(A) select and assemble effective marketing strategies;

(B) develop promotional packages;

(C) devise strategies for maximizing profit; and

(D) create a business plan.

(7) The student reviews the importance of management systems such as health, safety, and environmental and their function in performance and regulatory compliance. The student is expected to:

(A) determine local safety and sanitation requirements;

(B) explain how guests and property are protected to minimize losses or liabilities;

(C) outline safety and security issues and analyze solutions for individuals or groups in multiple environments to minimize risks;

(D) recognize potential, real, or perceived emergency situations such as a natural disaster or terrorist threat in order to respond appropriately;

(E) evaluate equipment for elements such as safety, functionality, and durability; and

(F) determine most appropriate sources of assistance such as self, coworkers, guests, the Federal Emergency Management Agency (FEMA), or first responders to use in varied emergency situations.

(8) The student understands roles within teams, work units, departments, organizations, inter-organizational systems, or the larger environment. The student is expected to:

(A) implement a set of operating procedures that results in profitable operations;

(B) create a detailed customer service plan or process to provide maximum customer service;

(C) prepare a staffing guide to schedule various staff positions;

(D) evaluate inventory management systems used in the hospitality industry to result in profitable operations;

(E) describe current industry collaborations or trends that provide more inclusive products or services to customers; and

(F) compare and contrast organizational structures of operations such as lodging, food and beverage, travel, and recreation.

(9) The student uses technological knowledge and skills required in food and beverage service. The student is expected to:

(A) evaluate prepared foods for quality and presentation to set quality standards in accordance with company standards;

(B) practice basic nutrition skills by planning, preparing, and presenting quality foods; and

(C) evaluate types of kitchen equipment to match equipment with correct cooking methodology.

(10) The student uses technological knowledge and skills required in hotel services. The student is expected to:

(A) describe the necessary information collected during the registration process;

(B) explain how room rates are established;

(C) explain how standard operating guidelines such as availability, room status, and guest satisfaction are used to assign rooms to arriving guests;

(D) examine the account settlement procedures on different methods of payment;

(E) explain how a hotel's computer system is used to create guest accounts; and

(F) summarize correct check-out procedures to prevent oversights or errors.

(11) The student uses technological knowledge and skills required in travel and tourism. The student is expected to:

(A) develop technical vocabulary for lodging, food and beverage service, recreation, and travel;

(B) compare and contrast diverse transportation options;

(C) integrate various or diverse elements of the travel and tourism industry to create a personalized travel experience for a customer; and

(D) compare and contrast products and services from related industries.

§127.600. Practicum in Culinary Arts (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Culinary Arts. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Practicum in Culinary Arts is a unique practicum that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Practicum in Culinary Arts integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace.

(4) Students are taught employability skills to prepare for college and career success, which include job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development.

(5) Instructions may be delivered through school-based laboratory training or through work-based delivery arrangement such as cooperative education, mentoring, and job shadowing.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses employability skills to gain an entry-level job in a high-skill, high-wage, or high-demand field. The student is expected to:

(A) identify employment opportunities;

(B) demonstrate the application of essential workplace skills in the career acquisition process;

(C) complete employment-related documents such as job applications, I-9 and W-4 forms, and job descriptions; and

(D) demonstrate proper interview techniques in various situations.

(2) The student develops skills for success in the workplace. The student is expected to:

(A) comprehend and model appropriate grooming and appearance for the workplace;

(B) demonstrate dependability, punctuality, and initiative;

(C) develop positive interpersonal skills, including respect for diversity;

(D) demonstrate appropriate business and personal etiquette in the workplace;

(E) exhibit productive work habits, ethical practices, and a positive attitude;

(F) demonstrate knowledge of personal and occupational health and safety practices in the workplace;

(G) demonstrate the ability to work with the other employees to support the organization and complete assigned tasks;

(H) prioritize work to fulfill responsibilities and meet deadlines;

(I) evaluate the relationship of good physical and mental health to job success and personal achievement;

(J) demonstrate effective verbal, non-verbal, written, and electronic communication skills; and

(K) apply effective listening skills used in the workplace.

(3) The student demonstrates work ethics, employer expectations, interaction with diverse populations, and communication skills in the workplace. The student is expected to:

(A) relate how personal integrity affects human relations on the job;

(B) demonstrate characteristics of successful working relationships such as teamwork, conflict resolution, self-control, and the ability to accept criticism;

(C) implement employer expectations;

(D) demonstrate respect for the rights of others;

(E) demonstrate ethical standards; and

(F) comply with organizational policies.

(4) The student applies academics and job-readiness skills. The student is expected to:

(A) apply mathematical skills to business transactions;

(B) develop a personal budget based on career choice;

(C) interpret data from documents such as tables, charts, and graphs to estimate and find solutions to problems; and

(D) organize and compose workplace documents.

(5) The student applies ethical behavior standards and legal responsibilities within the workplace. The student is expected to:

(A) compare workplace policies reflecting various business establishments;

(B) apply responsible and ethical behavior;

(C) summarize provisions of the Fair Labor Standards Act;

(D) describe the consequences of breach of confidentiality; and

(E) research and model laws related to culinary arts professions.

(6) The student applies the use of interpersonal skills to accomplish objectives. The student is expected to:

(A) identify and practice effective interpersonal and team-building skills involving situations with coworkers, managers, and customers; and

(B) apply leadership and career development skills through participation in activities such as career and technical student organizations.

(7) The student uses concepts and skills related to safety in the workplace. The student is expected to:

(A) identify and apply safe working practices;

(B) solve problems related to unsafe work practices and attitudes;

(C) explain Occupational Safety and Health Administration regulations in the workplace;

(D) analyze health and wellness practices that influence job performance; and

(E) prepare for a state or national food sanitation certification or other appropriate certification.

(8) The student evaluates personal attitudes and work habits that support career retention and advancement. The student is expected to:

(A) analyze the future employment outlook in the occupational area;

(B) describe entrepreneurial opportunities in the area of culinary arts;

(C) evaluate nontraditional food service careers such as food photographer, food stylist, corporate research and development chef, food writer, and independent consultant;

(D) identify all of the aspects of a specific career path, including salary, skills level, and advancement opportunities;

(E) evaluate strategies for career retention and advancement in response to the changing hospitality industry;

(F) compare and contrast the rights and responsibilities of employers and employees; and

(G) determine effective money management and financial planning techniques.

(9) The student identifies skills and attributes necessary for professional advancement. The student is expected to:

(A) evaluate employment options, including salaries and benefits;

(B) determine factors that affect career choices such as personal interests, abilities, priorities, and family responsibilities;

(C) determine continuing education opportunities that enhance career advancement and promote lifelong learning; and

(D) demonstrate effective methods to secure, maintain, and terminate employment.

(10) The student demonstrates proper culinary techniques and knowledge of the professional kitchen. The student is expected to:

(A) use large and small equipment in a commercial kitchen;

(B) develop food production and presentation techniques;

(C) demonstrate moist, dry, and combination cookery methods;

(D) demonstrate food preparation skills used in commercial food service preparations such as breakfast cookery, salads and dressings, soups and sandwiches, stocks and sauces, appetizers, seafood, poultry cookery, meat cookery, pastas and grains, and fruits and vegetables;

(E) demonstrate baking techniques such as yeast breads and rolls, quick breads, and desserts;

(F) demonstrate proper receiving and storage techniques;

(G) demonstrate proper cleaning of equipment and maintenance of the commercial kitchen; and

(H) compare and contrast the pairing of cuisine and service styles in food service operations.

(11) The student determines how successful marketing impacts a food service operation. The student is expected to:

(A) explain marketing, product, service, presentation, and communication mixes;

(B) generate a marketing plan for multiple food service operations;

(C) evaluate the marketing plans based on various demographics;

(D) conduct market analysis and predict impact on current economy;

(E) identity marketing communication formats across multiple platforms; and

(F) design the menu as a marketing tool.

(12) The student documents technical knowledge and skills. The student is expected to:

(A) complete a professional career portfolio to include items such as an updated resume, documentation of technical skill competencies, licensures or certifications, recognitions, awards and scholarships, community service hours, participation in student and professional organizations, abstract of key points of the practicum, and practicum supervisor evaluations; and

(B) present the portfolio to interested stakeholders.

§127.601. Extended Practicum in Culinary Arts (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Hospitality and Tourism Career Cluster. Prerequisite: Culinary Arts. Corequisite: Practicum in Culinary Arts. This course must be taken concurrently with Practicum in Culinary Arts and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Extended Practicum in Culinary Arts is a unique practicum that provides occupationally specific opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Extended Practicum in Culinary Arts integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace.

(4) Students are taught employability skills to prepare for college and career success, which include job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development.

(5) Instruction may be delivered through school-based laboratory training or through work-based delivery arrangements such as cooperative education, mentoring, and job shadowing.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) present information formally and informally in an effective manner;

(C) apply active listening skills to obtain and clarify information; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) comply with Occupational Safety and Health Administration regulations in the workplace;

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents;

(C) analyze health and wellness practices that influence job performance; and

(D) understand and follow workplace safety rules and regulations.

(4) The student understands the professional, ethical, and legal responsibilities in culinary arts. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) show integrity by choosing the ethical course of action when making decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student demonstrates proper culinary techniques and knowledge of the professional kitchen. The student is expected to:

(A) demonstrate proper use of large and small equipment in a commercial kitchen with increased proficiency;

(B) demonstrate advanced food production and presentation techniques;

(C) demonstrate moist, dry, and combination cookery methods;

(D) demonstrate advanced food preparation skills used in commercial food service preparations;

(E) demonstrate advanced baking techniques;

(F) demonstrate proper receiving and storage techniques; and

(G) demonstrate proper cleaning of equipment and maintenance of the commercial kitchen.

§127.602. Practicum in Hospitality Services (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Hospitality Services. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Practicum in Hospitality Services is a unique practicum experience to provide opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Practicum in Hospitality Services integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace. Students are taught employability skills, including job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development. Practicum in Hospitality Services is relevant and rigorous, supports student attainment of academic and technical standards, and effectively prepares students for college and career success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops skills for success in the workplace. The student is expected to:

(A) formulate and model appropriate grooming and appearance for the workplace;

(B) model dependability, punctuality, and initiative;

(C) display positive interpersonal skills such as respect for diversity;

(D) differentiate types of diversity from both the employer and customer perspective;

(E) exhibit appropriate business and personal etiquette in the workplace;

(F) exhibit productive work habits, ethical practices, and a positive attitude;

(G) integrate knowledge of personal and occupational safety practices in the workplace;

(H) collaborate with others to support the organization and complete assigned tasks as a team;

(I) organize work to fulfill responsibilities and meet deadlines; and

(J) compare and contrast the relationship of good physical and mental health strategies for job success and work-life balance.

(2) The student compares and contrasts the importance of work ethics, employer expectations, interaction with diverse populations, and communication skills in the workplace. The student is expected to:

(A) defend personal integrity as it affects human relations on the job;

(B) study and develop characteristics of successful working relationships such as teamwork, conflict resolution, self-control, and ability to accept criticism;

(C) analyze and defend employer expectations;

(D) demonstrate respect for the rights of others;

(E) compare and contrast the hospitality code of ethics and ethical standards; and

(F) support organizational policies and procedures.

(3) The student applies academics with career-readiness skills. The student is expected to:

(A) apply mathematical skills to business transactions;

(B) interpret data from documents such as tables, charts, and graphs to estimate and find solutions to problems; and

(C) organize and compose workplace business documents.

(4) The student applies ethical behavior standards, safety procedures, and legal responsibilities within the workplace. The student is expected to:

(A) compare and contrast published workplace policies;

(B) apply responsible and ethical behavior;

(C) evaluate provisions of state and federal labor laws; and

(D) evaluate the employer's and employee's fiduciary responsibilities to customers such as breach of confidentiality, safety, and privacy.

(5) The student models strategies and technique to develop interpersonal skills. The student is expected to:

(A) model effective interpersonal and team-building skills involving situations with diverse individuals; and

(B) model leadership through participation in activities such as career and technical student organizations.

(6) The student evaluates advancement opportunities and career paths in the industry. The student is expected to:

(A) analyze future employment in occupational areas;

(B) develop an entrepreneurial opportunity in the hospitality services area;

(C) compare and contrast salaries, industry demands, and challenges for various jobs in hospitality services; and

(D) evaluate the changing global workplace and future trends using governmental and other resources.

(7) The student identifies skills and attributes necessary for professional advancement. The student is expected to:

(A) evaluate continuing education opportunities that enhance career advancement and promote lifelong learning; and

(B) formulate effective strategies to secure, maintain, and terminate employment.

(8) The student understands roles within teams, work units, departments, organizations, and the larger environment of the hospitality services industry. The student is expected to:

(A) explain the different types and functions of all departments such as food and beverage to understand their impact on customer service;

(B) illustrate proficiency with duties in each of the departments of a hotel or tourism venue;

(C) compare and contrast lodging properties;

(D) analyze the differences between chain and franchise lodging operations; and

(E) explore the job duties in travel and tourism, recreation, and amusement and attraction venues.

(9) The student understands the knowledge and skills required for careers in the lodging industry. The student is expected to:

(A) examine, understand, and articulate job-specific technical vocabulary;

(B) explain technical procedures needed to meet guest needs such as registration, rate assignment, room assignment, and determination of payment methods;

(C) research and create a meeting/event company;

(D) evaluate current and emerging technologies to improve guest services; and

(E) determine the correct procedures for the traditional hotel guest cycle.

(10) The student documents in manual and electronic format acquired technical knowledge and skills from coherent plan of study. The student is expected to:

(A) produce a professional portfolio to include information such as:

(i) a current resume;

(ii) official documentation of attainment of technical skill competencies;

(iii) recognitions, awards, and scholarships;

(iv) community service activities;

(v) student organization participation;

(vi) practicum supervisor evaluations;

(vii) letters of recommendation;

(viii) cover letters;

(ix) documentation of preparation for state or national industry certification such as food sanitation certification; and

(x) any other supporting documents;

(B) present the portfolio to interested stakeholders;

(C) evaluate employment options, including salaries and benefits;

(D) determine effective money management and financial planning techniques to manage:

(i) insurance and benefits;

(ii) taxes;

(iii) retirement;

(iv) relocation costs;

(v) a budget;

(vi) housing costs; and

(vii) transportation costs; and

(E) develop a personal budget based on career choice using effective money management and financial planning techniques.

§127.603. Extended Practicum in Hospitality Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Hospitality and Tourism Career Cluster. Recommended prerequisite: Hospitality Services. Corequisite: Practicum in Hospitality Services. This course must be taken concurrently with Practicum in Hospitality Services and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Hospitality and Tourism Career Cluster focuses on the management, marketing, and operations of restaurants and other food/beverage services, lodging, attractions, recreation events, and travel-related services.

(3) Extended Practicum in Hospitality Services is a unique practicum experience that provides opportunities for students to participate in a learning experience that combines classroom instruction with actual business and industry career experiences. Extended Practicum in Hospitality Services integrates academic and career and technical education; provides more interdisciplinary instruction; and supports strong partnerships among schools, businesses, and community institutions with the goal of preparing students with a variety of skills in a fast-changing workplace.

(4) Students are taught employability skills, including job-specific skills applicable to their training plan, job interview techniques, communication skills, financial and budget activities, human relations, and portfolio development. Extended Practicum in Hospitality Services is relevant and rigorous, supports student attainment of academic and technical standards, and effectively prepares students for college and career success.

(5) Instruction may be delivered through school-based laboratory training or through work-based delivery arrangement such as cooperative education, mentoring, and job shadowing.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(7) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) present information formally and informally in an effective manner;

(C) analyze, interpret, and effectively communicate information;

(D) apply active listening skills to obtain and clarify information; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in hospitality services. The student is expected to:

(A) practice ethical conduct when interacting with others such as maintaining client confidentiality and maintaining privacy of sensitive content;

(B) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(C) show integrity by choosing the ethical course of action when making decisions;

(D) demonstrate proper etiquette and knowledge of acceptable-use policies when using networks, especially resources on the Internet and intranet; and

(E) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised hospitality experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised hospitality experience;

(B) practice technical procedures such as registration, rate assignment, room assignment, and determination of payment methods needed to meet guest needs;

(C) examine, understand, and articulate job-specific technical vocabulary;

(D) demonstrate proficiency in the duties for an appropriate department of a hotel or tourism venue; and

(E) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

SUBCHAPTER L. HUMAN SERVICES

19 TAC §§127.611 - 127.622, 127.665, 127.666

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.611. Principles of Human Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Principles of Human Services is a laboratory course that will enable students to investigate careers in the Human Services Career Cluster, including counseling and mental health, early childhood development, family and community, personal care, and consumer services. Each student is expected to complete the knowledge and skills essential for success in high-skill, high-wage, or high-demand human services careers.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates personal characteristics for success in high-skill, high-wage, or high-demand careers. The student is expected to:

(A) explain and practice responsible decision making consistent with personal needs, wants, values, and priorities;

(B) develop measurable short- and long-term goals for personal and professional life;

(C) demonstrate personal-management skills needed for productivity;

(D) practice ethical and appropriate methods of conflict resolution;

(E) investigate the significance of grooming, appearance, and appropriate apparel selection in personal and professional settings;

(F) analyze the relationship of wellness to personal and professional productivity;

(G) determine personal and professional implications of substance abuse;

(H) demonstrate apparel maintenance and repair skills that enhance appearance in personal and professional settings;

(I) practice leadership skills such as participation in career and technical student organizations; and

(J) demonstrate effective communication skills.

(2) The student demonstrates the skills necessary to enhance personal and career effectiveness in consumer services. The student is expected to:

(A) apply the decision-making process in planning the allocation and use of finances;

(B) use technology to manage resources;

(C) examine sustainable consumer buying techniques that promote effective use of resources;

(D) describe rewards, demands, and future trends in consumer service careers; and

(E) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(3) The student demonstrates the skills necessary to enhance personal and career effectiveness in counseling and mental health services. The student is expected to:

(A) identify types of crises;

(B) determine appropriate responses, management strategies, and available technology to meet individual and family needs;

(C) determine effects of crisis on individuals and families;

(D) predict crises typical of various stages of the life cycle;

(E) identify the contributing factors of stress and how those factors impact individuals and relationships;

(F) investigate causes, prevention, and treatment of domestic violence;

(G) describe rewards, demands, and future trends in counseling and mental health services; and

(H) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(4) The student demonstrates the skills necessary to enhance personal and career effectiveness in early childhood development and services. The student is expected to:

(A) identify the basic needs of children;

(B) analyze the responsibilities of caregivers for promoting the safety and development of children;

(C) determine developmentally appropriate guidance techniques for children;

(D) investigate causes, preventions, and treatment of child abuse;

(E) describe rewards, demands, and future trends in early childhood development and services; and

(F) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(5) The student demonstrates the skills necessary to enhance personal and career effectiveness in family and community services. The student is expected to:

(A) identify the basic functions of the family, including roles and responsibilities;

(B) investigate societal, cultural, demographic, and economic factors affecting the responsibilities of family members;

(C) analyze the multiple roles and responsibilities assumed by individuals within the family;

(D) investigate community service opportunities;

(E) analyze dietary practices across the life span;

(F) explain the impact of nutrition on development, wellness, and productivity over the life span;

(G) prepare nutritious snacks or meals that contribute to wellness and productivity through the life span;

(H) describe rewards, demands, and future trends in family and community services; and

(I) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(6) The student demonstrates the skills necessary to enhance personal and career effectiveness in fashion design. The student is expected to:

(A) describe factors influencing apparel selection;

(B) analyze apparel selection practices that accommodate personal needs, including age, lifestyle, special needs, and career;

(C) interpret and use information on apparel care labels;

(D) demonstrate safety practices when using and caring for apparel construction tools and equipment;

(E) demonstrate simple clothing repair and alteration techniques;

(F) describe rewards, demands, and future trends in fashion design; and

(G) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(7) The student demonstrates the skills necessary to enhance personal and career effectiveness in interior design. The student is expected to:

(A) describe priorities and needs that influence interior design decisions;

(B) identify the elements and principles of design used in interiors;

(C) describe safe use and care of interior furnishings and equipment;

(D) identify maintenance and safety practices that affect interiors;

(E) discuss cultural, demographic, societal, and economic factors that influence interior design trends;

(F) describe rewards, demands, and future trends in interior design; and

(G) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

(8) The student demonstrates the skills necessary to enhance personal and career effectiveness in personal care services. The student is expected to:

(A) explore new and emerging technologies that may affect personal care services;

(B) investigate the specific state requirements for licensure in personal care services;

(C) create records, including electronic records, of client services to retrieve personal care client information;

(D) examine different types of media to achieve maximum impact on targeted client populations;

(E) describe rewards, demands, and future trends in personal care services; and

(F) identify employment and entrepreneurial opportunities and preparation requirements in the areas of personal interest.

§127.612. Principles of Cosmetology Design and Color Theory (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Recommended prerequisite: Principles of Human Services. Students may begin to earn Texas Department of Licensing and Regulation (TDLR) hours toward a Cosmetology Operator License. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) In Principles of Cosmetology Design and Color Theory, students coordinate integration of academic, career, and technical knowledge and skills in this laboratory instructional sequence course designed to provide job-specific training for employment in cosmetology careers. Students will attain academic skills and knowledge as well as technical knowledge and skills related to cosmetology design and color theory. Students will develop knowledge and skills regarding various cosmetology design elements such as form, lines, texture, structure and illusion or depth as they relate to the art of cosmetology. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the TDLR requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the field of cosmetology design and color theory. The student is expected to:

(A) recognize elements of hair design such as line, form, space, texture, and color;

(B) investigate and identify lines that create width and length;

(C) explain the position of diagonal and curved lines to emphasize or minimize facial features;

(D) identify different facial shapes and their importance to hair design;

(E) explore the significance and function of parallel lines in hair design;

(F) judge the relevance of contrasting and transitional lines in hair design;

(G) explain the importance of knowledge of color theory as it applies to the cosmetology field;

(H) document the scope of client services affected by basic color theory such as artificial hair color services, facial makeup application, eyebrow color, and eyelash tint services;

(I) explain the theories of color illusion such as light and dark colors and tones that may create an illusion of more or less volume in the hair design;

(J) justify the selection of color process as it pertains to skin tone and eye color;

(K) create a logical structure for color; and

(L) make use of primary, secondary, and tertiary colors as they relate to the field of cosmetology.

(2) The student demonstrates knowledge of the rules and regulations established by the TDLR. The student is expected to:

(A) apply health and safety policies and procedures;

(B) recognize risks and potentially hazardous situations in compliance with the TDLR;

(C) navigate the TDLR website for exam eligibility, exam results, and student hours; and

(D) identify licensure and renewal requirements of the licensee or licensed cosmetology establishment or school.

(3) The student demonstrates proficiency in the use of tools, equipment, technologies, and materials used in color theory and elements of design in cosmetology. The student is expected to:

(A) create a digital portfolio of design elements that are relevant to the cosmetology field;

(B) use ergonomically designed equipment to promote professional efficiency;

(C) use available technology sources effective in a professional salon setting; and

(D) apply universal precautions in disposal of hazardous materials.

(4) The student applies the academic knowledge and practical skills to simulated and actual work situations. The student is expected to:

(A) apply client consultation skills to guide individuals in recognizing concerns and making informed decisions;

(B) document client satisfaction with procedures and products to facilitate ease of consultation in future appointments;

(C) locate and compare vendors to maximize benefits for personal care clients, businesses, or organizations;

(D) demonstrate understanding and proficiency working with complementary colors;

(E) execute application procedure of artificial hair color such as virgin tint to darken, bleach retouch, virgin tint to lighten, and dimensional color services such as cap highlighting, foil highlighting, and low-lighting;

(F) explore the use of different types of hair colors such as demi-permanent color, permanent color, semi-permanent color, temporary color, toners, and fillers;

(G) make use of products designed to increase the vibrancy of a color formula or to neutralize unwanted tones such as concentrates, intensifiers, pigments, or drabbers; and

(H) use natural products to color the hair such as henna or vegetable dyes.

(5) The student analyzes career paths within the cosmetology industry. The student is expected to:

(A) explore marketing techniques when selecting and using multimedia to attract and retain clientele;

(B) formulate a salon service menu based upon current industry trends;

(C) consolidate various methods of obtaining feedback from clients to understand their expectations and promote high-quality standards;

(D) create an employment portfolio containing content such as certifications, samples of work, achievements, and supervisor or instructor evaluations; and

(E) analyze the role of professional organizations in cosmetology professions.

§127.613. Dollars and Sense (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Principles of Human Services. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Dollars and Sense focuses on consumer practices and responsibilities, money-management processes, decision-making skills, impact of technology, and preparation for human services careers.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates management of individual and family resources such as finances, food, clothing, shelter, health care, recreation, transportation, time, and human capital. The student is expected to:

(A) analyze the economic rights and responsibilities of individuals as consumers;

(B) apply management, planning skills, and processes to organize tasks and responsibilities;

(C) develop and apply multiple strategies for individuals and families to make choices to satisfy needs and wants;

(D) analyze the consequences of an economic decision made by an individual consumer such as the decisions to provide safe and nutritious food, clothing, housing, health care, recreation, and transportation; and

(E) analyze the impact of media and technological advances on family and consumer decisions.

(2) The student demonstrates management of financial resources to meet the goals of individuals and families across the life span. The student is expected to:

(A) evaluate the need for personal and family financial planning, including maintaining a budget, expense records, and economic self-sufficiency;

(B) compare types of loans available to consumers and distinguish criteria for becoming a low-risk borrower;

(C) connect mathematics to the understanding of interest, including avoiding and eliminating credit card debt;

(D) collect evidence and data related to implementing a savings program, the time value of money, and retirement planning;

(E) explore how to be a prudent investor in the stock market and other investment options;

(F) investigate the benefits of charitable giving;

(G) compare types of banks, credit unions, and virtual banks available to consumers and the benefits of maintaining financial accounts;

(H) demonstrate the ability to maintain financial records;

(I) investigate bankruptcy laws, including ways to avoid bankruptcy;

(J) apply management principles to decisions about insurance for individuals and families;

(K) evaluate personal and legal documents related to managing individual and family finances such as birth certificates, medical records, social security cards, financial records, and property records; and

(L) demonstrate the ability to use calculators, spreadsheets, computers, and software in data analysis relating to finance.

(3) The student demonstrates effective consumer skills related to housing needs. The student is expected to:

(A) explain consumer rights and responsibilities associated with renting or buying a home;

(B) analyze legal and financial aspects of purchasing and leasing housing; and

(C) propose money-management skills necessary to make the transition from renting to home ownership.

(4) The student analyzes the relationship of the environment to family and consumer resources. The student is expected to:

(A) analyze individual and family responsibilities in relation to environmental trends and issues;

(B) summarize environmental trends and issues affecting families and future generations;

(C) demonstrate behaviors that conserve, reuse, and recycle resources to maintain the environment; and

(D) explain governmental regulations for conserving natural resources.

(5) The student analyzes relationships between the economic system and consumer actions. The student is expected to:

(A) analyze economic effects of laws and regulations that pertain to consumers and providers of services; and

(B) identify types of taxes at the local, state, and national levels and the economic importance of each.

(6) The student identifies skills and attributes necessary for sustaining a chosen lifestyle. The student is expected to:

(A) evaluate and compare employment options, including salaries and benefits;

(B) compare rewards and demands for various levels of employment in a variety of careers;

(C) determine how interests, abilities, personal priorities, and family responsibilities affect career choices;

(D) determine continuing education opportunities that enhance career advancement and promote lifelong learning; and

(E) use presentation skills to communicate and apply knowledge of careers in consumer services.

(7) The student integrates knowledge, skills, and practices required for careers in consumer services. The student is expected to:

(A) explain the roles and functions of individuals engaged in consumer services careers;

(B) analyze opportunities for employment and entrepreneurial endeavors;

(C) summarize education and training requirements for consumer services careers; and

(D) investigate professional organizations for consumer services.

§127.614. Lifetime Nutrition and Wellness (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Human Services, Principles of Hospitality and Tourism, or Principles of Health Science. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Lifetime Nutrition and Wellness is a laboratory course that allows students to use principles of lifetime wellness and nutrition to help them make informed choices that promote wellness as well as pursue careers related to hospitality and tourism, education and training, human services, and health sciences.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands the role of nutrients in the body. The student is expected to:

(A) classify nutrients and their functions and food sources and compare the nutritive value of various foods;

(B) assess the effects of nutritional intake on health, appearance, effective job performance, and personal life;

(C) analyze and apply various dietary guidelines throughout the life cycle, including pregnancy, infancy, childhood, and late adulthood; and

(D) compare personal food intake to recommended dietary guidelines.

(2) The student understands the principles of digestion and metabolism. The student is expected to:

(A) describe the processes of digestion and metabolism;

(B) calculate and explain basal and activity metabolisms and factors that affect each;

(C) apply knowledge of digestion and metabolism when making decisions related to food intake and physical fitness;

(D) locate community resources that promote physical activity and fitness; and

(E) explain the relationship of activity levels and caloric intake to health and wellness, including weight management.

(3) The student demonstrates knowledge of nutritionally balanced diets. The student is expected to:

(A) research the long-term effects of food choices;

(B) outline strategies for prevention, treatment, and management of diet-related diseases such as diabetes, hypertension, childhood obesity, anorexia, and bulimia;

(C) determine the effects of food allergies and intolerances on individual and family health;

(D) plan diets based on life cycle, activity level, nutritional needs, portion control, and food budget;

(E) develop examples of therapeutic diets;

(F) analyze advertising claims and fad diets with the recommendations of the Recommended Dietary Allowances;

(G) analyze current lifestyle habits that may increase health risks;

(H) identify community programs that provide nutrition and wellness services;

(I) examine the nutritional value of fast foods and convenience foods;

(J) read and interpret food labels;

(K) examine and explain nutritional serving sizes;

(L) compare organic and green food choices; and

(M) determine sustainable food choices and their impact on society.

(4) The student understands safety and sanitation. The student is expected to:

(A) demonstrate safe and sanitary practices in the use, care, and storage of food and equipment;

(B) explain types and prevention of food-borne illnesses; and

(C) practice appropriate dress and personal hygiene in food preparation.

(5) The student demonstrates knowledge of food-management principles. The student is expected to:

(A) read and comprehend standard recipes;

(B) correctly use standard measuring techniques and equipment;

(C) demonstrate correct food-preparation techniques, including nutrient retention;

(D) use food-buying strategies such as calculating food costs, planning food budgets, and creating grocery lists;

(E) demonstrate food-preparation techniques to reduce overall fat and calories;

(F) practice etiquette, food presentation, and table service appropriate for specific situations; and

(G) apply food-storage principles.

(6) The student demonstrates effective work habits. The student is expected to:

(A) participate as an effective team member by demonstrating cooperation and responsibility;

(B) apply effective practices for managing time and energy to complete tasks on time;

(C) practice problem solving using leadership and teamwork skills; and

(D) use presentation skills to communicate and apply knowledge about careers in consumer services.

(7) The student investigates careers in nutrition. The student is expected to:

(A) compare and contrast education or training needed for careers in nutrition;

(B) establish personal short- and long-term career goals;

(C) analyze entrepreneurial opportunities in nutrition; and

(D) apply a problem-solving approach to a business challenge or opportunity to improve sustainability efforts while maintaining or increasing profits and/or organizational health.

§127.615. Interpersonal Studies (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Principles of Human Services, Principles of Hospitality and Tourism, Principles of Health Science, or Principles of Education and Training. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Interpersonal Studies examines how the relationships between individuals and among family members significantly affect the quality of life. Students use knowledge and skills in family studies and human development to enhance personal development, foster quality relationships, promote wellness of family members, manage multiple adult roles, and pursue careers related to counseling and mental health services.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student evaluates factors related to personal development. The student is expected to:

(A) investigate factors that affect personal identity, personality, and self-esteem;

(B) analyze how the family influences the development of personal identity and self-esteem of all family members, including those with special needs; and

(C) propose strategies that promote physical, emotional, intellectual, and social development.

(2) The student determines short- and long-term implications of personal decisions. The student is expected to:

(A) summarize the decision-making process;

(B) discuss consequences and responsibilities of decisions; and

(C) evaluate the effect of decisions on health, well-being, family, interpersonal relationships, employment, and society as a whole.

(3) The student analyzes considerations related to the transition to independent adulthood. The student is expected to:

(A) analyze adjustments related to achieving independence; and

(B) explore responsibilities of living as an independent adult.

(4) The student analyzes the family's role in relationship development. The student is expected to:

(A) examine the development of relationships;

(B) investigate the family's role in fostering the abilities of its members to develop healthy relationships; and

(C) analyze effects of cultural patterns on family relationships.

(5) The student analyzes relationship development outside the family. The student is expected to:

(A) explore ways to promote positive friendships;

(B) assess the influence of peers on the individual;

(C) determine appropriate responses to authority figures; and

(D) propose ways to promote an appreciation of diversity.

(6) The student determines factors related to marital success. The student is expected to:

(A) discuss reasons for dating and the impact of social media on dating;

(B) analyze components of a successful marriage; and

(C) examine communication skills and behaviors that strengthen marriage.

(7) The student determines methods that promote an effective family unit. The student is expected to:

(A) describe diverse family structures;

(B) identify the function of individuals within the family;

(C) compare functions of families in various cultures;

(D) predict the effects of societal, demographic, and economic trends on individuals and the family;

(E) determine procedures for meeting individual and family needs through resource management;

(F) explain how technology such as social media influences family functions and relationships; and

(G) determine the impact of effective family functioning on community and society.

(8) The student determines how changes occurring throughout the family life cycle impact individuals and families. The student is expected to:

(A) describe the stages of the family life cycle;

(B) examine roles and responsibilities of individuals and family members throughout the family life cycle;

(C) analyze financial considerations related to the family life cycle;

(D) predict the impact of technological advances on families throughout the family life cycle; and

(E) formulate a plan for effective management of technology on families throughout the family life cycle.

(9) The student analyzes types of needs and crises experienced by individuals and families. The student is expected to:

(A) categorize types of crises and their effect on individuals and families;

(B) determine strategies for prevention and management of individual and family problems and crises;

(C) identify resources and support systems that provide assistance to families in crisis;

(D) assess management strategies and technology available to meet special needs of family members; and

(E) summarize laws and public policies related to the family.

(10) The student determines stress-management techniques effective for individuals and families. The student is expected to:

(A) describe the impact of stress on individuals and relationships;

(B) identify factors contributing to stress;

(C) practice creative techniques for managing stress; and

(D) implement positive strategies for dealing with change.

(11) The student determines opportunities and preparation requirements for his or her chosen careers. The student is expected to:

(A) determine employment and entrepreneurial opportunities and preparation requirements for careers in his or her chosen field;

(B) determine how interests, abilities, and personal priorities affect career choice; and

(C) propose short- and long-term career goals.

(12) The student develops professional skills and behavior. The student is expected to:

(A) practice effective verbal, nonverbal, written, and electronic communication skills;

(B) analyze the influence of cultural background on patterns of communication;

(C) practice positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;

(D) determine ethical practices in the workplace; and

(E) use leadership and team member skills in problem-solving situations.

(13) The student analyzes management practices to help an individual assume multiple family, community, and wage-earner roles. The student is expected to:

(A) determine the impact of career choice on family life;

(B) describe the effect of family life on workplace productivity;

(C) determine employment practices and trends that support families; and

(D) explain how technology impacts career options and family roles.

§127.616. Counseling and Mental Health (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Principles of Human Services. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) In Counseling and Mental Health, students model the knowledge and skills necessary to pursue a counseling and mental health career through simulated environments. Students are expected to apply knowledge of ethical and legal responsibilities, limitations, and the implications of their actions. Professional integrity in counseling and mental health care is dependent on acceptance of ethical and legal responsibilities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies mathematics, science, English language arts, and social studies in human services. The student is expected to:

(A) evaluate the use of verbal and nonverbal language in a variety of mental health situations;

(B) explain the nervous system of the human body;

(C) identify societal perspectives related to mental health;

(D) explain the physiological effects of stress and aging;

(E) distinguish the psychological aspects of health and wellness across the life span;

(F) identify socioeconomic factors that influence mental health and care;

(G) compare social services such as drug dependency rehabilitation centers; and

(H) differentiate maladaptive conditions such as paranoia, schizophrenia, and aggression.

(2) The student demonstrates verbal and nonverbal communication skills. The student is expected to:

(A) interpret verbal and nonverbal messages and adapt communication to the needs of the individual;

(B) demonstrate listening skills and techniques to minimize communication barriers; and

(C) implement communication skills that are responsive rather than reactive.

(3) The student researches career options and the preparation necessary for employment in mental health. The student is expected to:

(A) identify career opportunities related to mental health;

(B) research the role of the multidisciplinary team;

(C) justify the consequences of decisions;

(D) demonstrate techniques of peer mediation, problem solving, and negotiation;

(E) interpret, transcribe, and communicate mental health vocabulary; and

(F) investigate treatment options.

(4) The student models the ethical behavior standards and legal responsibilities related to mental health. The student is expected to:

(A) display ethical practices and the principles of confidentiality;

(B) research and describe legal aspects and issues of malpractice, negligence, and liability;

(C) examine a designated scope of practice of professionals;

(D) recognize client rights and choices and circumstances that alter client rights;

(E) dramatize case studies related to client rights and choices;

(F) review legislation that affects standards of client care; and

(G) describe regulatory agencies such as the Department of State Health Services and Department of Aging and Disability Services.

(5) The student maintains a safe environment to prevent hazardous situations. The student is expected to:

(A) recognize abusive situations;

(B) anticipate and adapt to changing situations;

(C) demonstrate appropriate actions in emergency situations; and

(D) practice personal and client safety.

(6) The student analyzes the technology related to information services. The student is expected to:

(A) review the processes for collection and dissemination of health care data;

(B) classify equipment used in the delivery of mental health services; and

(C) employ technology consistent with the student's level of training.

§127.617. Family and Community Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Human Services. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Family and Community Services is a laboratory-based course designed to involve students in realistic and meaningful community-based activities through direct service or service-learning experiences. Students are provided opportunities to interact with and provide services to individuals, families, and the community through community or volunteer services. Emphasis is placed on developing and enhancing organizational and leadership skills and characteristics.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores careers in family and community services. The student is expected to:

(A) research family and community services such as agencies, organizations, and faith-based services;

(B) investigate career options available that focus on families and communities;

(C) analyze demographics that may affect community needs;

(D) analyze future trends in family and community services; and

(E) analyze the role socialization plays in human development and behavior.

(2) The student demonstrates organizational and leadership skills in a community service environment. The student is expected to:

(A) demonstrate management practices to help an individual assume multiple family, community, and wage-earner roles;

(B) identify personal leadership characteristics;

(C) develop a plan for enhancing personal leadership characteristics;

(D) demonstrate positive interpersonal skills, including conflict resolution, negotiation, teamwork, and leadership;

(E) identify and apply effective strategies and skills necessary for collaborative relationships with others in community service settings;

(F) plan and deliver family and community services presentations; and

(G) practice leadership skills such as participation in career and technical student organizations.

(3) The student develops and implements community and service-learning activities. The student is expected to:

(A) identify service projects that benefit a community;

(B) integrate student interests, abilities, and skills into community and service-learning projects;

(C) plan, develop, implement, and evaluate community and service-learning activities that benefit individuals, families, or the community;

(D) demonstrate safety practices when participating in community service and service-learning activities;

(E) document personal development through participation in community and service-learning activities;

(F) demonstrate appropriate grooming, appearance, and etiquette for community and service-learning activities;

(G) demonstrate ethical practices when participating in community service and service-learning activities; and

(H) design a public relations campaign promoting community and service-learning activities.

§127.618. Introduction to Cosmetology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) In Introduction to Cosmetology, students explore careers in the cosmetology industry. To prepare for success, students must have academic and technical knowledge and skills relative to the industry. Students may begin to earn hours toward state licensing requirements.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the field of cosmetology. The student is expected to:

(A) appraise safe and effective personal care products and services;

(B) model leadership skills within a classroom or community setting to maintain positive relationships;

(C) recognize the importance of a thorough client consultation;

(D) investigate the principles and practices of infection control such as bacterial disorders, classification of pathogens, and diseases and/or viruses; and

(E) explore the chemistry of materials as they relate to the eyelash extension application service.

(2) The student demonstrates knowledge of rules and regulations established by the Texas Department of Licensing and Regulation (TDLR). The student is expected to:

(A) implement policies and procedures regarding health and safety;

(B) recognize risks and potentially hazardous situations in compliance with the TDLR;

(C) navigate the TDLR website for exam eligibility, exam results, and student hours; and

(D) identify licensure and renewal requirements.

(3) The student identifies and describes the function of tools, equipment, and technologies used in cosmetology. The student is expected to:

(A) explore safe use of tools to enhance client services;

(B) describe ergonomically correct use of equipment to promote professional efficiency; and

(C) summarize available technology sources that could be used in a professional salon setting.

(4) The student develops professional skills needed to make appropriate career plans. The student is expected to:

(A) define what is expected of an employee such as ethical conduct, team building skills, principles of selling, and building a clientele;

(B) examine personal conduct in the salon to comply with professional liability;

(C) research the elements of successful salon operations such as recordkeeping, inventory, and business plan development;

(D) distinguish different types of salon categories such as commission based, hourly, and independent contractor; and

(E) prepare an employment portfolio that may include professional resume and evidence of accomplishments.

§127.619. Cosmetology I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10 and 11. Recommended prerequisite: Introduction to Cosmetology. Recommended corequisite: Cosmetology I Lab. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) In Cosmetology I, students coordinate integration of academic, career, and technical knowledge and skills in this laboratory instructional sequence course designed to provide job-specific training for employment in cosmetology careers. Instruction includes sterilization and sanitation procedures, hair care, nail care, and skin care and meets the Texas Department of Licensing and Regulation (TDLR) requirements for licensure upon passing the state examination. Analysis of career opportunities, license requirements, knowledge and skills expectations, and development of workplace skills are included.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the field of cosmetology. The student is expected to:

(A) explain the importance of anatomy and physiology to the cosmetology profession;

(B) identify body tissue, body systems, and their functions;

(C) explain the structure, composition, and growth of skin, nails, and hair;

(D) apply the principles of organic and inorganic chemistry;

(E) classify solutions, suspensions, and emulsions that may be used during cosmetology services;

(F) apply an understanding of pH and the pH scale to cosmetology services;

(G) explain the principles and practices of infection control, including bacterial disorders and diseases and viruses; and

(H) explore the nature of electricity by defining types of electric current and the electric modalities used in cosmetology.

(2) The student demonstrates knowledge of rules and regulations established by the TDLR. The student is expected to:

(A) apply health and safety policies and procedures;

(B) recognize risks and potentially hazardous situations in compliance with the TDLR;

(C) navigate the TDLR website for exam eligibility, exam results, and student hours; and

(D) identify licensure and renewal requirements of the licensee or licensed cosmetology establishment or school.

(3) The student demonstrates an understanding in the use of tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) employ safe and effective use of tools to enhance client services;

(B) use ergonomically designed equipment to promote professional efficiency;

(C) use available technology sources effective in a professional salon setting; and

(D) apply universal precautions in disposal of hazardous materials.

(4) The student applies the academic knowledge and practical skills to simulated and actual work situations. The student is expected to:

(A) apply client consultation skills to guide individuals in recognizing concerns and making informed decisions;

(B) document client satisfaction, procedures, and products to facilitate ease of consultation in future appointments;

(C) locate and compare vendors to maximize benefits for personal care clients, businesses, or organizations;

(D) demonstrate understanding and proficiency of basic haircuts such as zero degree, forty-five degree, ninety degree, and one hundred eighty degree;

(E) perform basic manicure, facial, and mock chemical service application as required for the state practical exam; and

(F) execute shampooing, permanent waving, curl demonstration, blow drying, and thermal curling service as required for the state practical exam.

§127.620. Cosmetology I Lab (One Credit), Adopted 2018.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10 and 11. Recommended prerequisite: Introduction to Cosmetology. This course must be taken concurrently with Cosmetology I and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Cosmetology I to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as early childhood development and services, counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Cosmetology I Lab provides instruction and content directly aligned to the licensure requirements as established by the Texas Department of Licensing and Regulation (TDLR).

(4) Careers in cosmetology include all aspects of sterilization and sanitation procedures and personal care services, including hair care, nail care, and skin care. Students will be expected to develop an understanding of the technical knowledge and skills needed for success in the personal care services industry.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) demonstrate professionalism in selecting appropriate attire for the profession and work site;

(B) demonstrate effective oral and written communication with diverse individuals, including coworkers, management, and clients;

(C) demonstrate personal ownership over the quality of individual performance;

(D) explore employment opportunities, including entrepreneurship; and

(E) create appropriate document information for employment such as a resume.

(2) The student demonstrates knowledge of rules and regulations related to sanitation, disinfection, and health and safety as established by TDLR. The student is expected to:

(A) apply knowledge of health and safety policies and procedures in a work setting in compliance with TDLR requirements;

(B) demonstrate cleaning and disinfecting of the work environment, including implements and equipment;

(C) demonstrate techniques to avoid risks and potentially hazardous situations in compliance with TDLR requirements; and

(D) demonstrate industry best practices when disposing of hazardous materials in compliance with TDLR requirements.

(3) The student demonstrates knowledge of appropriate use of tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) demonstrate safe and effective use of tools to enhance client services;

(B) practice and promote professional efficiency by using ergonomically designed equipment; and

(C) critique, select, and operate effective technology resources in a professional salon as available.

(4) The student applies the practical management skills in simulated and actual work situations. The student is expected to:

(A) apply client consultation skills to guide individuals in recognizing concerns and making future appointments;

(B) select and implement a client management system appropriate for a professional work situation; and

(C) document client satisfaction, procedures, and products to facilitate ease of consultation in future appointments.

(5) The student demonstrates proficiency in executing basic cosmetology services as required for the state practical examination. The student is expected to:

(A) demonstrate proficiency of basic haircuts such as zero degree, forty-five degree, ninety degree, and one hundred eighty degree;

(B) demonstrate basic manicure skills and techniques;

(C) demonstrate basic facial service skills and techniques;

(D) demonstrate basic chemical service applications;

(E) demonstrate basic shampooing techniques;

(F) demonstrate basic permanent waving techniques;

(G) demonstrate basic curling techniques;

(H) demonstrate basic blow drying techniques; and

(I) demonstrate basic thermal styling techniques.

§127.621. Cosmetology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Cosmetology I. Recommended corequisite: Cosmetology II Lab. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) In Cosmetology II, students will demonstrate proficiency in academic, technical, and practical knowledge and skills. The content is designed to provide the occupational skills required for licensure. Instruction includes advanced training in professional standards/employability skills; Texas Department of Licensing and Regulation (TDLR) rules and regulations; use of tools, equipment, technologies and materials; and practical skills.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the field of cosmetology. The student is expected to:

(A) defend the importance of anatomy and physiology to the cosmetology profession;

(B) summarize the structure, composition, and growth of skin, nails, and hair;

(C) test the principles of organic and inorganic chemistry;

(D) evaluate solutions, suspensions, and emulsions that may be used during cosmetology services such as shampoos, conditioners, and nail care products;

(E) select chemical services to maintain a normal pH of hair and skin;

(F) describe the chemistry and main ingredients of nail enhancements such as polymer powder, monomer liquid, and ultraviolet (UV) gels and how they work;

(G) explain how to prepare the hair for application and removal of extensions such as human or artificial hair; and

(H) formulate a salon infection control plan to maintain health and safety of employees and clients.

(2) The student demonstrates knowledge of rules and regulations established by the TDLR. The student is expected to:

(A) apply health and safety policies and procedures;

(B) recognize risks, including potentially hazardous situations, in compliance with the TDLR;

(C) navigate the TDLR website for exam eligibility, exam results, and student hours; and

(D) identify licensure and renewal requirements of the licensee or licensed cosmetology establishment or school.

(3) The student demonstrates proficiency in the use of tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) employ safe and effective use of tools to enhance client services;

(B) use ergonomically designed equipment to promote professional efficiency;

(C) use available technology sources effectively in a professional salon setting;

(D) apply universal precautions in disposal of hazardous and non-hazardous materials; and

(E) formulate client services based on the correct quality and quantity of materials.

(4) The student applies the academic knowledge and practical skills to simulated and actual work situations. The student is expected to:

(A) appraise client desires to assist with formulation of personal care services;

(B) judge client satisfaction by recording solutions, procedures, and products to enhance future services and client interactions;

(C) use vendor resources to provide maximum benefit for clients, service providers, businesses, or organizations;

(D) demonstrate mastery of basic haircuts such as zero degree, forty-five degree, ninety degree, one hundred eighty degree, and men's clipper cut;

(E) display proficiency of a manicure, facial, and mock chemical service application as required for the state practical exam; and

(F) master the technique of shampooing, permanent waving, curl demonstration, blow drying, and thermal curling service as required for the state practical exam.

(5) The student analyzes career paths within the cosmetology industry. The student is expected to:

(A) explore marketing techniques when selecting and using multimedia to attract and retain clientele;

(B) formulate a salon service menu based upon current industry trends;

(C) consolidate various methods of obtaining feedback from clients to understand their expectations and promote high-quality standards;

(D) create an employment portfolio containing content such as certifications, samples of work, achievements, and supervisor or instructor evaluations; and

(E) analyze the role of professional organizations in cosmetology professions.

§127.622. Cosmetology II Lab (One Credit), Adopted 2018.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Cosmetology I. This course must be taken concurrently with Cosmetology II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Cosmetology II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as early childhood development and services, counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Cosmetology II Lab provides instruction and content directly aligned to the licensure requirements as established by the Texas Department of Licensing and Regulation (TDLR).

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) demonstrate professionalism in selecting appropriate attire for the profession and work site;

(B) demonstrate professionalism by practicing the use of effective oral and written communication with diverse individuals, including coworkers, management, and clients;

(C) demonstrate personal ownership over the quality of individual performance;

(D) explore employment opportunities, including entrepreneurship; and

(E) collect and compile mastery-level work samples and evaluations to be included in an employment portfolio as appropriate.

(2) The student demonstrates knowledge of rules and regulations related to sanitation, disinfection, and health and safety as established by TDLR. The student is expected to:

(A) apply knowledge of health and safety policies and procedures in a work setting in compliance with TDLR requirements;

(B) demonstrate cleaning and disinfecting of the work environment, including implements and equipment;

(C) demonstrate techniques to avoid risks and potentially hazardous situations in compliance with TDLR requirements; and

(D) demonstrate industry best practices when disposing hazardous materials in compliance with TDLR requirements.

(3) The students demonstrates mastery in the use of tools, equipment, technologies, and materials used in cosmetology. The student is expected to:

(A) apply with increased fluency proficient, safe, and effective use of tools in a simulated or actual work setting to enhance client services;

(B) demonstrate with increased fluency professional efficiency by using ergonomically designed equipment; and

(C) demonstrate with increased fluency effective integration of technology sources in a professional salon as available.

(4) The student executes proficient managerial and practical skills in diverse work and professional situations with minimal direction. The student is expected to:

(A) resolve client concerns with little to no guidance by using appropriate consultation skills;

(B) practice consultation skills to guide individuals in selecting future appointments and services;

(C) assess and document client satisfaction in a simulated and actual work situation;

(D) assess and document client products to inform future client consultations; and

(E) operate a client management system in diverse work and professional situations.

(5) The student performs cosmetology services with increased fluency as required for the state practical examination in a simulated and/or work setting with minimal guidance. The student is expected to:

(A) demonstrate mastery-level haircut skills and techniques;

(B) demonstrate mastery-level manicure skills and techniques;

(C) demonstrate mastery-level facial skills and techniques;

(D) demonstrate mastery-level knowledge of chemical applications;

(E) demonstrate mastery-level shampooing techniques;

(F) demonstrate mastery-level permanent waving techniques;

(G) perform curling services while demonstrating mastery-level curling techniques;

(H) perform blow drying services while demonstrating mastery-level blow drying techniques; and

(I) perform thermal styling services while demonstrating mastery-level thermal styling techniques.

§127.665. Practicum in Human Services (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Practicum in Human Services provides background knowledge and occupation-specific training that focuses on the development of consumer services, early childhood development and services, counseling and mental health services, and family and community-services careers. Content for Practicum in Human Services is designed to meet the occupational preparation needs and interests of students and should be based upon the knowledge and skills selected from two or more courses in a coherent sequence in the human services cluster.

(4) Instruction may be delivered through school-based laboratory training or through work-based delivery arrangements such as cooperative education, mentoring, and job shadowing.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes career paths within the human services industries. The student is expected to:

(A) review careers within the Human Services Career Cluster;

(B) complete a resume;

(C) create, maintain, and present an employment portfolio with content such as licensures or certifications, samples of work, and evaluation from a supervisor for use during practicum experience in human services careers;

(D) demonstrate appropriate interviewing skills to seek employment or job shadowing experiences;

(E) analyze the effects of the human services industry on local, state, national, and global economies; and

(F) analyze the role of professional organizations in human-services professions.

(2) The student uses oral and written communication skills and solves problems using critical-thinking skills. The student is expected to:

(A) practice effective verbal, nonverbal, written, and electronic communication skills;

(B) use effective communication skills such as ability to empathize, motivate, listen attentively, and speak courteously and respectfully when working with clients;

(C) apply appropriate customer service techniques to complete transactions;

(D) investigate client resources and risk tolerance levels such as evaluating client resources versus cost, educating client about most beneficial choices, and recommending best products, plans, or services for the client; and

(E) consult with supervisor when needed to expedite solutions to client problems.

(3) The student uses business tools or procedures to create human services information and facilitate client interactions. The student is expected to:

(A) evaluate numerical information and perform complex calculations accurately;

(B) use appropriate electronic resources to access current information;

(C) use word-processing, database, spreadsheet, or presentation software to accurately prepare needed documents; and

(D) discuss and practice appropriate workplace communication etiquette.

(4) The student identifies how organizational systems affect performance and the quality of products and services. The student is expected to:

(A) examine global factors that affect the performance and quality of products and services in the industry;

(B) apply principles of planning, design, development, and evaluation to accomplish long-range goals; and

(C) implement quality-control systems and practices that ensure quality products and services.

(5) The student determines a healthy environment that inspires client confidence in services provided. The student is expected to:

(A) identify appropriate locations to safely offer human services;

(B) examine a functional work environment, equipment needs, and required utilities for offering human services;

(C) describe elements of a non-threatening workplace environment;

(D) identify appropriate social skills necessary for interacting with a diverse population;

(E) discuss and employ procedures necessary to provide emergency aid for workplace accidents; and

(F) explore components of a disaster and emergency response plan and use when directed.

(6) The student uses leadership and teamwork skills in collaborating with others. The student is expected to:

(A) collaborate with others to accomplish organizational goals and objectives;

(B) establish and maintain working relationships with all levels of personnel; and

(C) propose organizational priorities to ensure quality.

(7) The student describes and observes ethical and legal responsibilities associated with providing human services. The student is expected to:

(A) investigate situations requiring client advocacy and advocate when necessary;

(B) describe and practice ethical behaviors when working with human services clients; and

(C) comply with laws and regulations related to retail, governmental, or private services.

(8) The student selects and uses appropriate business procedures and equipment to produce satisfying client outcomes and business success. The student is expected to:

(A) manage funds using appropriate technology;

(B) place orders for customers and supplies using sound business practices;

(C) respond to client questions appropriately; and

(D) advise clients using appropriate and relevant information.

§127.666. Extended Practicum in Human Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Human Services Career Cluster. Corequisite: Practicum in Human Services. This course must be taken concurrently with Practicum in Human Services and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Human Services Career Cluster focuses on preparing individuals for employment in career pathways that relate to families and human needs such as counseling and mental health services, family and community services, personal care services, and consumer services.

(3) Extended Practicum in Human Services provides background knowledge and occupation-specific training that focuses on the development of consumer services, early childhood development and services, counseling and mental health services, and family and community-services careers. Content for Extended Practicum in Human Services is designed to meet the occupational preparation needs and interests of students and should be based upon the knowledge and skills selected from two or more courses in a coherent sequence in the human services cluster.

(4) Instruction may be delivered through school-based laboratory training or through work-based delivery arrangements such as cooperative education, mentoring, and job shadowing.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) present information formally and informally in an effective manner;

(C) analyze, interpret, and effectively communicate information;

(D) apply active listening skills to obtain and clarify information; and

(E) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow workplace safety rules and regulations;

(B) identify appropriate locations to safely offer human services;

(C) employ procedures necessary to provide emergency aid for workplace accidents; and

(D) demonstrate an understanding of components of a disaster and emergency response plan and use when directed.

(4) The student understands the professional, ethical, and legal responsibilities in human services. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) describe and practice ethical and legal responsibilities associated with providing human services;

(C) show integrity by choosing the ethical course of action when making decisions;

(D) address situations requiring client advocacy appropriately and advocate when necessary; and

(E) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised human services experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised human services experience;

(B) implement quality-control systems and practices that ensure quality products and services with increased fluency;

(C) identify a functional work environment, equipment needs, and required utilities for offering human services;

(D) employ appropriate social skills necessary for interacting with a diverse population; and

(E) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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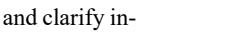

SUBCHAPTER M. INFORMATION TECHNOLOGY

19 TAC §§127.671 - 127.688, 127.720 - 127.727, 127.735 - 127.738

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.671. Principles of Information Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Principles of Information Technology, students will develop computer literacy skills to adapt to emerging technologies used

in the global marketplace. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. Students will enhance reading, writing, computing, communication, and reasoning skills and apply them to the information technology environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) identify job opportunities and accompanying job duties and tasks;

(B) research careers of personal interest along with the education, job skills, and experience required to achieve personal career goals; and

(C) describe the functions of resumes and portfolios.

(2) The student uses evolving and emerging technologies to exchange information. The student is expected to:

(A) identify and describe functions of various evolving and emerging technologies;

(B) send and receive text information and file attachments using electronic methods such as email, electronic bulletin boards, and instant message services;

(C) demonstrate effective Internet search strategies, including keywords and Boolean logic, using various available search engines;

(D) identify the various components of a Uniform Resource Locator;

(E) demonstrate ability to effectively test acquired information from the Internet for accuracy, relevance, and validity;

(F) explain issues concerning computer-based threats such as computer viruses, malware, and hacking; and

(G) explain issues concerning Internet safety such as identity theft, online predators, cyber-bullying, and phishing.

(3) The student demonstrates knowledge of the hardware components associated with information systems. The student is expected to:

(A) identify major hardware components and their functions;

(B) use available reference tools as appropriate; and

(C) connect and use a variety of peripheral devices such as mouse, keyboard, microphone, digital camera, and printer.

(4) The student demonstrates knowledge of the different software associated with information systems. The student is expected to:

(A) differentiate between systems and application software;

(B) identify and explain major operating system fundamentals and components such as disk operations, graphical user interface components, and hardware drivers;

(C) explain the purpose of file types across software products;

(D) demonstrate use of computer numbering systems and internal data representation such as identifying the hexadecimal value of a color;

(E) compare and contrast open source and proprietary software;

(F) explain use of system management tools;

(G) apply proper file management techniques such as creating, naming, organizing, copying, moving, and deleting files;

(H) use appropriate file protection and security; and

(I) explain the process for discovering, quarantining, and removing viruses from a computer system.

(5) The student analyzes network systems. The student is expected to:

(A) identify hardware associated with telecommunications and data networking such as servers, routers, switches, and network connectors;

(B) identify and describe various types of networks such as peer-to-peer, local area networks, wide area networks, wireless, and Ethernet;

(C) identify functions of network operating systems; and

(D) explain troubleshooting techniques for various network connection issues.

(6) The student applies word-processing technology. The student is expected to:

(A) identify the terminology associated with word-processing software;

(B) edit a variety of text documents using functions such as pagination, appropriate white space, tab settings, and font style, size, and color; and

(C) create professional documents such as memorandums, technical manuals, or proposals using advanced word-processing features.

(7) The student applies spreadsheet technology. The student is expected to:

(A) identify the terminology associated with spreadsheet software;

(B) use numerical content to perform mathematical calculations;

(C) use student-created and preprogrammed functions to produce documents such as budget, payroll, statistical tables, and personal checkbook register;

(D) identify, generate, and describe the function of comma separated value files;

(E) create and analyze spreadsheets incorporating advanced features such as lookup tables, nested IF statements, subtotals, cell protection conditional formatting, charts, and graphs; and

(F) perform sorting, searching, and data filtering in documents.

(8) The student explores computer programming concepts. The student is expected to:

(A) identify the function of compilers and interpreters;

(B) explain the difference between the operation of compilers and interpreters;

(C) identify various computer languages and how the languages are used in software development;

(D) recognize data representation in software development such as string, numeric, character, integer, and date;

(E) identify and explain the concept of algorithms; and

(F) describe the flow of a structured algorithm, including linear and iterative instructions such as using a flow chart.

(9) The student explores database technology. The student is expected to:

(A) identify the terminology associated with database software and database functions;

(B) explore the application of databases;

(C) identify and explain the purpose and elements of a query language;

(D) identify and explain the purpose of fields and records; and

(E) describe the process of constructing a query, including multiple search parameters.

(10) The student applies presentation management technology. The student is expected to:

(A) identify the terminology and functions of presentation software; and

(B) create, save, edit, and produce presentations incorporating advanced features such as links, hyperlinks, audio, and graphics.

(11) The student applies design and web publishing techniques. The student is expected to:

(A) identify the terminology associated with web page development and interactive media;

(B) identify and explain design elements such as typeface, color, shape, texture, space, and form;

(C) identify and explain design principles such as unity, harmony, balance, scale, and contrast;

(D) identify and explain common elements of Hyper Text Markup Language (HTML) such as tags, stylesheets, and hyperlinks; and

(E) create a web page containing links, graphics, and text using appropriate design principles.

(12) The student understands and demonstrates legal and ethical procedures as they apply to the use of information technology. The student is expected to:

(A) explain and demonstrate ethical use of technology and online resources;

(B) adhere to intellectual property laws;

(C) explain the concept of intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;

(D) examine the consequences of plagiarism;

(E) identify and explain unethical practices such as hacking, online piracy, and data vandalism; and

(F) demonstrate ethical use of online resources, including citation of source.

(13) The student applies project management skills to information technology projects. The student is expected to:

(A) identify and demonstrate planning strategies such as storyboarding;

(B) identify phases of project management, including initiating, planning, executing, monitoring and controlling, and closing a project.

§127.672. Fundamentals of Computer Science (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Fundamentals of Computer Science is intended as a first course for those students just beginning the study of computer science. Students will learn about the computing tools that are used every day. Students will foster their creativity and innovation through opportunities to design, implement, and present solutions to real-world problems. Students will collaborate and use computer science concepts to access, analyze, and evaluate information needed to solve problems. Students will learn computational thinking, problem-solving, and reasoning skills that are the foundation of computer science. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws, regulations, and best practices and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations

and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability. The student identifies various employment opportunities in the computer science field. The student is expected to:

(A) identify job and internship opportunities and accompanying job duties and tasks and contact one or more companies or organizations to explore career opportunities;

(B) examine the role of certifications, resumes, and portfolios in the computer science profession;

(C) employ effective technical reading and writing skills;

(D) employ effective verbal and non-verbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science;

(H) demonstrate planning and time-management skills; and

(I) compare university computer science programs.

(2) Creativity and innovation. The student develops products and generates new knowledge, understanding, and skills. The student is expected to:

(A) investigate and explore various career opportunities within the computer science field and report findings through various media;

(B) create algorithms for the solution of various problems;

(C) discuss methods and create and publish web pages using a web-based language such as HTML, Java Script, or XML; and

(D) use generally accepted design standards for spacing, fonts, and color schemes to create functional user interfaces, including static and interactive screens.

(3) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) seek and respond to advice or feedback from peers, educators, or professionals when evaluating problem solutions;

(B) debug and solve problems using reference materials and effective strategies; and

(C) publish information in a variety of ways such as print, monitor display, web pages, or video.

(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) demonstrate the ability to insert external standalone objects such as scripts or widgets into web pages;

(B) communicate an understanding of binary representation of data in computer systems, perform conversions between decimal and binary number systems, and count in binary number systems;

(C) identify a problem's description, purpose, and goals;

(D) demonstrate coding proficiency in a programming language by developing solutions that create stories, games, and animations;

(E) identify and use the appropriate data type to properly represent the data in a program problem solution;

(F) communicate an understanding of and use variables within a programmed story, game, or animation;

(G) use arithmetic operators to create mathematical expressions, including addition, subtraction, multiplication, real division, integer division, and modulus division;

(H) communicate an understanding of and use sequence within a programmed story, game, or animation;

(I) communicate an understanding of and use conditional statements within a programmed story, game, or animation;

(J) communicate an understanding of and use iteration within a programmed story, game, or animation;

(K) use random numbers within a programmed story, game, or animation; and

(L) test program solutions by investigating intended outcomes.

(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:

(A) discuss privacy and copyright laws and model ethical acquisition of digital information by citing sources using established methods;

(B) compare various non-copyright asset sharing options such as open source, freeware, and public domain;

(C) demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks;

(D) explain the value of strong passwords and virus detection and prevention for privacy and security;

(E) discuss and give examples of the impact of computing and computing-related advancements on society; and

(F) analyze how electronic media can affect reliability of information.

(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:

(A) identify and explain the function of basic computer components, including a central processing unit (CPU), storage, and peripheral devices;

(B) use system tools, including appropriate file management;

(C) compare different operating systems;

(D) describe the differences between an application and an operating system; and

(E) use various input, processing, output, and primary/secondary storage devices.

§127.673. Computer Science I (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Prerequisite or corequisite: Algebra I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Computer Science I will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through computational thinking and data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws, regulations, and best practices and by practicing integrity and respect. Students will gain an understanding of the principles of computer science through the study of technology operations, systems, and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability. The student identifies various employment opportunities in the computer science field. The student is expected to:

(A) identify job and internship opportunities and accompanying job duties and tasks and contact one or more companies or organizations to explore career opportunities;

(B) examine the role of certifications, resumes, and portfolios in the computer science profession;

(C) employ effective technical reading and writing skills;

(D) employ effective verbal and non-verbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) communicate an understanding of legal and ethical responsibilities in relation to the field of computer science;

(H) demonstrate planning and time-management skills; and

(I) compare university computer science programs.

(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) participate in learning communities as a learner, initiator, contributor, and teacher/mentor; and

(B) seek and respond to advice from peers, educators, or professionals when evaluating quality and accuracy of the student's product.

(3) Programming style and presentation. The student utilizes proper programming style and develops appropriate visual presentation of data, input, and output. The student is expected to:

(A) create and properly label and display output;

(B) create interactive input interfaces, with relevant user prompts, to acquire data from a user such as console displays or Graphical User Interfaces (GUIs);

(C) write programs with proper programming style to enhance the readability and functionality of a code by using descriptive identifiers, internal comments, white space, spacing, indentation, and a standardized program style;

(D) format data displays using standard formatting styles; and

(E) display simple vector graphics using lines, circles, and rectangles.

(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) use program design problem-solving strategies such as flowchart or pseudocode to create program solutions;

(B) create a high-level program plan using a visual tool such as a flowchart or graphic organizer;

(C) identify the tasks and subtasks needed to solve a problem;

(D) identify the data types and objects needed to solve a problem;

(E) identify reusable components from existing code;

(F) design a solution to a problem;

(G) code a solution from a program design;

(H) identify error types, including syntax, lexical, run time, and logic;

(I) test program solutions with valid and invalid test data and analyze resulting behavior;

(J) debug and solve problems using error messages, reference materials, language documentation, and effective strategies;

(K) create and implement common algorithms such as finding greatest common divisor, finding the biggest number out of three, finding primes, making change, and finding the average;

(L) create program solutions that address basic error handling such as preventing division by zero and type mismatch;

(M) select the most appropriate construct for a defined problem;

(N) create program solutions by using the arithmetic operators to create mathematical expressions, including addition, subtraction, multiplication, real division, integer division, and modulus division;

(O) create program solutions to problems using available mathematics library functions or operators, including absolute value, round, power, square, and square root;

(P) develop program solutions that use assignment;

(Q) develop sequential algorithms to solve non-branching and non-iterative problems;

(R) develop algorithms to decision-making problems using branching control statements;

(S) develop iterative algorithms and code programs to solve practical problems;

(T) demonstrate the appropriate use of the relational operators;

(U) demonstrate the appropriate use of the logical operators; and

(V) generate and use random numbers.

(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:

(A) discuss and explain intellectual property, privacy, sharing of information, copyright laws, and software licensing agreements;

(B) practice ethical acquisition and use of digital information;

(C) demonstrate proper digital etiquette, responsible use of software, and knowledge of acceptable use policies;

(D) investigate privacy and security measures, including strong passwords, pass phrases, and other methods of authentication and virus detection and prevention; and

(E) investigate computing and computing-related advancements and the social and ethical ramifications of computer usage.

(6) Technology operations, systems, and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:

(A) identify and describe the function of major hardware components, including primary and secondary memory, a central processing unit (CPU), and peripherals;

(B) differentiate between current programming languages, discuss the general purpose for each language, and demonstrate knowledge of specific programming terminology and concepts and types of software development applications;

(C) differentiate between a high-level compiled language and an interpreted language;

(D) identify and use concepts of object-oriented design;

(E) differentiate between local and global scope access variable declarations;

(F) encapsulate data and associated subroutines into an abstract data type;

(G) create subroutines that do not return values with and without the use of arguments and parameters;

(H) create subroutines that return typed values with and without the use of arguments and parameters;

(I) create calls to processes passing arguments that match parameters by number, type, and position;

(J) compare data elements using logical and relational operators;

(K) identify and convert binary representation of numeric and nonnumeric data in computer systems using American Standard Code for Information Interchange (ASCII) or Unicode;

(L) identify finite limits of numeric data such as integer wrap around and floating point precision;

(M) perform numerical conversions between the decimal and binary number systems and count in the binary number system;

(N) choose, identify, and use the appropriate data types for integer, real, and Boolean data when writing program solutions;

(O) analyze the concept of a variable, including primitives and objects;

(P) represent and manipulate text data, including concatenation and other string functions;

(Q) identify and use the structured data type of one-dimensional arrays to traverse, search, and modify data;

(R) choose, identify, and use the appropriate data type or structure to properly represent the data in a program problem solution; and

(S) compare strongly typed and un-typed programming languages.

§127.674. Computer Science II (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2024-2025 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter

(relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: Algebra I and Computer Science I or AP Computer Science Principles. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Computer Science II will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through computational thinking and data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will gain an understanding of computer science through the study of technology operations, systems, and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability. The student identifies various employment opportunities in the computer science field. The student is expected to:

(A) identify job and internship opportunities and accompanying job duties and tasks and contact one or more companies or organizations to explore career opportunities;

(B) examine the role of certifications, resumes, and portfolios in the computer science profession;

(C) employ effective technical reading and writing skills;

(D) employ effective verbal and non-verbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) identify legal and ethical responsibilities in relation to the field of computer science;

(H) demonstrate planning and time-management skills; and

(I) compare university computer science programs.

(2) Creativity and innovation. The student develops products and generates new understandings by extending existing knowledge. The student is expected to:

(A) use program design problem-solving strategies to create program solutions;

(B) read, analyze, and modify programs and their accompanying documentation such as an application programming interface (API), internal code comments, external documentation, or readme files;

(C) follow a systematic problem-solving process that identifies the purpose and goals, the data types and objects needed, and the subtasks to be performed;

(D) compare design methodologies and implementation techniques such as top-down, bottom-up, and black box;

(E) trace a program, including inheritance and black box programming;

(F) choose, identify, and use the appropriate abstract data type, advanced data structure, and supporting algorithms to properly represent the data in a program problem solution; and

(G) use object-oriented programming development methodology, including data abstraction, encapsulation with information hiding, inheritance, and procedural abstraction in program development.

(3) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) use the principles of software development to work in software design teams;

(B) break a problem statement into specific solution requirements;

(C) create a program development plan;

(D) code part of a solution from a program development plan while a partner codes the remaining part;

(E) collaborate with a team to test a solution, including boundary and standard cases; and

(F) develop presentations to report the solution findings.

(4) Data literacy and management. The student locates, analyzes, processes, and organizes data. The student is expected to:

(A) use programming file structure and file access for required resources;

(B) acquire and process information from text files, including files of known and unknown sizes;

(C) manipulate data using string processing;

(D) manipulate data values by casting between data types;

(E) use the structured data type of one-dimensional arrays to traverse, search, modify, insert, and delete data;

(F) identify and use the structured data type of two-dimensional arrays to traverse, search, modify, insert, and delete data;

(G) identify and use a list object data structure to traverse, search, insert, and delete data; and

(H) differentiate between categories of programming languages, including machine, assembly, high-level compiled, high-level interpreted, and scripted.

(5) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) develop sequential algorithms using branching control statements, including nested structures, to create solutions to decision-making problems;

(B) develop choice algorithms using selection control statements based on ordinal values;

(C) demonstrate the appropriate use of short-circuit evaluation in certain situations;

(D) use Boolean algebra, including De Morgan's Law, to evaluate and simplify logical expressions;

(E) develop iterative algorithms using nested loops;

(F) identify, trace, and appropriately use recursion in programming solutions, including algebraic computations;

(G) trace, construct, evaluate, and compare search algorithms, including linear searching and binary searching;

(H) identify, describe, trace, evaluate, and compare standard sorting algorithms, including selection sort, bubble sort, insertion sort, and merge sort;

(I) measure time and space efficiency of various sorting algorithms, including analyzing algorithms using "big-O" notation for best, average, and worst-case data patterns;

(J) develop algorithms to solve various problems such as factoring, summing a series, finding the roots of a quadratic equation, and generating Fibonacci numbers;

(K) test program solutions by investigating boundary conditions; testing classes, methods, and libraries in isolation; and performing stepwise refinement;

(L) identify and debug compile, syntax, runtime, and logic errors;

(M) compare efficiency of search and sort algorithms by using informal runtime comparisons, exact calculation of statement execution counts, and theoretical efficiency values using "big-O" notation, including worst-case, best-case, and average-case time/space analysis;

(N) count, convert, and perform mathematical operations in the decimal, binary, octal, and hexadecimal number systems;

(O) identify maximum integer boundary, minimum integer boundary, imprecision of real number representations, and round-off errors;

(P) create program solutions to problems using a mathematics library;

(Q) use random number generator algorithms to create simulations;

(R) use composition and inheritance relationships to identify and create class definitions and relationships;

(S) explain and use object relationships between defined classes, abstract classes, and interfaces;

(T) create object-oriented class definitions and declarations using variables, constants, methods, parameters, and interface implementations;

(U) create adaptive behaviors using polymorphism;

(V) use reference variables for object and string data types;

(W) use value and reference parameters appropriately in method definitions and method calls;

(X) implement access scope modifiers;

(Y) use object comparison for content quality;

(Z) duplicate objects using the appropriate deep or shallow copy;

(AA) apply functional decomposition to a program solution;

(BB) create objects from class definitions through instantiation; and

(CC) examine and mutate the properties of an object using accessors and modifiers.

§127.675. Computer Science III (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Computer Science II, Advanced Placement (AP) Computer Science A, or International Baccalaureate (IB) Computer Science Standard Level or IB Computer Science Higher Level. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Computer Science III will foster students' creativity and innovation by presenting opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve the problems presented throughout the course. Through computational thinking and data analysis, students will identify task requirements, plan search strategies, and use computer science concepts to access, analyze, and evaluate information needed to solve problems. By using computer science knowledge and skills that support the work of individuals and groups in solving problems,

students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will gain an understanding of advanced computer science data structures through the study of technology operations, systems, and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(6) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(d) Knowledge and skills.

(1) Employability. The student identifies various employment opportunities in the computer science field. The student is expected to:

(A) identify job and internship opportunities and accompanying job duties and tasks and contact one or more companies or organizations to explore career opportunities;

(B) examine the role of certifications, resumes, and portfolios in the computer science profession;

(C) employ effective technical reading and writing skills;

(D) employ effective verbal and non-verbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) demonstrate an understanding of legal and ethical responsibilities in relation to the field of computer science;

(H) demonstrate planning and time-management skills; and

(I) compare university computer science programs.

(2) Creativity and innovation. The student develops products and generates new understandings by extending existing knowledge. The student is expected to:

(A) apply object-oriented programming, including data abstraction, encapsulation, inheritance, and polymorphism, to manage the complexity of a project;

(B) design and implement a class hierarchy;

(C) read and write class specifications using visual organizers, including Unified Modeling Language;

(D) identify, describe, evaluate, compare, and implement standard sorting algorithms that perform sorting operations on data structures, including quick sort and heap sort; and

(E) identify and use the appropriate abstract data type, advanced data structure, and supporting algorithms to properly represent the data in a program problem solution.

(3) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) use networked tools for file management and collaboration; and

(B) work in software design teams.

(4) Data literacy and management. The student locates, analyzes, processes, and organizes data. The student is expected to:

(A) identify and use two-dimensional ragged arrays to traverse, search, modify, insert, and delete data;

(B) describe and demonstrate proper linked list management, including maintaining the head and safe addition and deletion of linked objects;

(C) create or trace program solutions using a linked-list data structure, including unordered single, ordered single, double, and circular linked;

(D) describe composite data structures, including a linked list of linked lists;

(E) create or trace program solutions using stacks, queues, trees, heaps, priority queues, graph theory, and enumerated data types;

(F) create or trace program solutions using sets, including hash and tree-based data structures;

(G) create or trace program solutions using map style data structures; and

(H) write and modify text file data.

(5) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) evaluate expressions using bitwise operators;

(B) evaluate expressions using the ternary operator;

(C) identify, trace, and appropriately use recursion in programming solutions, including processing binary trees;

(D) create or trace program solutions using hashing;

(E) explore common algorithms such as matrix addition and multiplication, fractals, Towers of Hanoi, and magic square; and

(F) create program solutions that exhibit robust behavior by recognizing and avoiding runtime errors and handling anticipated errors.

(6) Testing and documentation. The student demonstrates appropriate documentation and testing practices. The student is expected to:

(A) use appropriate formatting and write documentation to support code maintenance, including pre- and post-condition statements;

(B) write program assumptions in the form of assertions;

(C) write a Boolean expression to test a program assertion; and

(D) construct assertions to make explicit program invariants.

(7) Practical application of technology. The student utilizes technology concepts, systems, and operations as they apply to computer science. The student is expected to:

(A) analyze and create computer program workflow charts and basic system diagrams, documenting system functions, features, and operations;

(B) gather requirements, design, and implement a process by which programs can interact with each other such as using interfaces;

(C) create simple programs using a low-level language such as assembly;

(D) create discovery programs in a high-level language;

(E) create scripts for an operating system;

(F) explore industry best practices for secure programming; and

(G) explore emerging industry or technology trends.

§127.676. Foundations of Cybersecurity (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry and relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Cybersecurity is a critical discipline concerned with safeguarding computers, networks, programs, and data from unauthorized access. As a field, it has gained prominence with the expansion of a globally connected society. As computing has become more sophisticated, so too have the abilities of adversaries looking to penetrate networks and access systems and sensitive information. Cybersecurity professionals prevent, detect, and respond to minimize disruptions to governments, organizations, and individuals.

(4) In the Foundations of Cybersecurity course, students will develop the knowledge and skills needed to explore fundamental concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyberattacks, threats, and vulnerabilities. Students will review and explore security policies designed to mitigate risks. The skills obtained in this course prepare students for additional study in cybersecurity. A variety of courses are available to students interested in this field. Foundations of Cybersecurity may serve as an introductory course in this field of study.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Professional awareness. The student identifies various employment opportunities and requirements in the cybersecurity field. The student is expected to:

(A) identify job and internship opportunities and accompanying job duties and tasks;

(B) research careers in cybersecurity and information security and develop professional profiles that match education and job skills required for obtaining a job in both the public and private sectors;

(C) identify and discuss certifications for cybersecurity-related careers; and

(D) explain the different types of services and roles found within a cybersecurity functional area such as a security operations center (SOC).

(2) Ethics and laws. The student understands ethical and current legal standards, rights and restrictions governing technology, technology systems, digital media, and the use of social media. The student is expected to:

(A) demonstrate and advocate for ethical and legal behaviors both online and offline among peers, family, community, and employers;

(B) investigate and analyze local, state, national, and international cybersecurity laws such as the USA PATRIOT Act of 2001, General Data Protection Regulation, Digital Millennium Copyright Act, Computer Fraud and Abuse Act, and Health Insurance Portability and Accountability Act of 1996 (HIPAA);

(C) investigate and analyze noteworthy incidents or events regarding cybersecurity;

(D) communicate an understanding of ethical and legal behavior when presented with various scenarios related to cybersecurity activities;

(E) define and identify tactics used in an incident such as social engineering, malware, denial of service, spoofing, and data vandalism; and

(F) identify and use appropriate methods for citing sources.

(3) Ethics and laws. The student differentiates between ethical and malicious hacking. The student is expected to:

(A) identify motivations and perspectives for hacking;

(B) distinguish between types of threat actors such as hacktivists, criminals, state-sponsored actors, and foreign governments;

(C) identify and describe the impact of cyberattacks on the global community, society, and individuals;

(D) differentiate between industry terminology for types of hackers such as black hats, white hats, and gray hats; and

(E) determine and describe possible outcomes and legal ramifications of ethical versus malicious hacking practices.

(4) Ethics and laws. The student identifies and defines cyberterrorism and counterterrorism. The student is expected to:

(A) define cyberterrorism, state-sponsored cyberterrorism, and hacktivism;

(B) compare and contrast physical terrorism and cyberterrorism, including domestic and foreign actors;

(C) define and explain intelligence gathering;

(D) explain the role of cyber defense in protecting national interests and corporations;

(E) explain the role of cyber defense in society and the global economy; and

(F) explain the importance of protecting public infrastructures such as electrical power grids, water systems, pipelines, transportation, and power generation facilities from cyberterrorism.

(5) Digital citizenship. The student understands and demonstrates the social responsibility of end users regarding significant issues related to digital technology, digital hygiene, and cyberbullying. The student is expected to:

(A) identify and understand the nature and value of privacy;

(B) analyze the positive and negative implications of a digital footprint and the maintenance and monitoring of an online presence;

(C) discuss the role and impact of technology on privacy;

(D) identify the signs, emotional effects, and legal consequences of cyberbullying and cyberstalking; and

(E) identify and discuss effective ways to deter and report cyberbullying.

(6) Digital citizenship. The student understands the implications of sharing information and access with others. The student is expected to:

(A) define personally identifiable information (PII);

(B) evaluate the risks and benefits of sharing PII;

(C) describe the impact of granting applications unnecessary permissions such as mobile devices accessing camera and contacts;

(D) describe the risks of granting third parties access to personal and proprietary data on social media and systems; and

(E) describe the risks involved with accepting Terms of Service (ToS) or End User License Agreements (EULA) without a basic understanding of the terms or agreements.

(7) Cybersecurity skills. The student understands basic cybersecurity concepts and definitions. The student is expected to:

(A) define cybersecurity and information security;

(B) identify basic risk management and risk assessment principles related to cybersecurity threats and vulnerabilities, including the Zero Trust model;

(C) explain the fundamental concepts of confidentiality, integrity, and availability (CIA triad);

(D) describe the trade-offs between convenience and security;

(E) identify and analyze cybersecurity breaches and incident responses;

(F) identify and analyze security challenges in domains such as physical, network, cloud, and web;

(G) define and discuss challenges faced by cybersecurity professionals such as internal and external threats;

(H) identify indicators of compromise such as common risks, warning signs, and alerts of compromised systems;

(I) explore and discuss the vulnerabilities of network-connected devices such as Internet of Things (IoT);

(J) use appropriate cybersecurity terminology;

(K) explain the concept of penetration testing, including tools and techniques; and

(L) explore and identify common industry frameworks such as MITRE ATT&CKTM, MITRE Engage TM, and Cyber Kill Chain, and the Diamond Model.

(8) Cybersecurity skills. The student understands and explains various types of malicious software (malware). The student is expected to:

(A) define malware, including spyware, ransomware, viruses, and rootkits;

(B) identify the transmission and function of malware such as trojan horses, worms, and viruses;

(C) discuss the impact of malware and the model of "as a service";

(D) explain the role of reverse engineering for the detection of malware and viruses; and

(E) describe free and commercial antivirus and anti-malware software also known as Endpoint Detection and Response software.

(9) Cybersecurity skills. The student understands and demonstrates knowledge of techniques and strategies to prevent a system from being compromised. The student is expected to:

(A) define system hardening;

(B) use basic system administration privileges;

(C) explain the importance of patching operating systems;

(D) explain the importance of software updates;

(E) describe standard practices to configure system services;

(F) explain the importance of backup files;

(G) research and explain standard practices for securing computers, networks, and operating systems, including the concept of least privilege; and

(H) identify vulnerabilities caused by a lack of cybersecurity awareness and training such as weaknesses posed by individuals within an organization.

(10) Cybersecurity skills. The student understands basic network operations. The student is expected to:

(A) identify basic network devices, including routers and switches;

(B) define network addressing;

(C) analyze incoming and outgoing rules for traffic passing through a firewall;

(D) identify well known ports by number and service provided, including port 22 (Secure Shell Protocol/ssh), port 80 (Hypertext Transfer Protocol/http), and port 443 (Hypertext Transfer Protocol Secure/https);

(E) identify commonly exploited ports and services, including ports 20 and 21 (File Transfer Protocol/ftp), port 23 (telnet protocol), and port 3389 (Remote Desktop Protocol/rdp); and

(F) identify common tools for monitoring ports and network traffic.

(11) Cybersecurity skills. The student identifies standard practices of system administration. The student is expected to:

(A) define what constitutes a secure password;

(B) create a secure password policy, including length, complexity, account lockout, and rotation;

(C) identify methods of password cracking such as brute force and dictionary attacks; and

(D) examine and configure security options to allow and restrict access based on user roles.

(12) Cybersecurity skills. The student demonstrates necessary steps to maintain user access on the system. The student is expected to:

(A) identify different types of user accounts and groups on an operating system;

(B) explain the fundamental concepts and standard practices related to access control, including authentication, authorization, and auditing;

(C) compare methods for single- and multi-factor authentication such as passwords, biometrics, personal identification numbers (PINs), secure tokens, and other passwordless authentication methods;

(D) define and explain the purpose and benefits of an air-gapped computer; and

(E) explain how hashes and checksums may be used to validate the integrity of transferred data.

(13) Cybersecurity skills. The student explores the field of digital forensics. The student is expected to:

(A) explain the importance of digital forensics to organizations, private citizens, and the public sector;

(B) identify the role of chain of custody in digital forensics;

(C) explain the four steps of the forensics process, including collection, examination, analysis, and reporting;

(D) identify when a digital forensics investigation is necessary;

(E) identify information that can be recovered from digital forensics investigations such as metadata and event logs; and

(F) analyze the purpose of event logs and identify suspicious activity.

(14) Cybersecurity skills. The student explores the operations of cryptography. The student is expected to:

(A) explain the purpose of cryptography and encrypting data;

(B) research historical uses of cryptography;

(C) review and explain simple cryptography methods such as shift cipher and substitution cipher;

(D) define and explain public key encryption; and

(E) compare and contrast symmetric and asymmetric encryption.

(15) Vulnerabilities, threats, and attacks. The student understands vulnerabilities, threats, and attacks. The student is expected to:

(A) explain how computer vulnerabilities leave systems open to cyberattacks;

(B) explain how users are the most common vehicle for compromising a system at the application level;

(C) define and describe vulnerability, payload, exploit, port scanning, and packet sniffing;

(D) identify internal threats to systems such as logic bombs and insider threats;

(E) define and describe cyberattacks, including man-in-the-middle, distributed denial of service, spoofing, and back-door attacks;

(F) differentiate types of social engineering techniques such as phishing; web links in email, instant messaging, social media, and other online communication with malicious links; shoulder surfing; and dumpster diving; and

(G) identify various types of application-specific attacks such as cross-site scripting and injection attacks.

(16) Vulnerabilities, threats, and attacks. The student evaluates the vulnerabilities of networks. The student is expected to:

(A) compare vulnerabilities associated with connecting devices to public and private networks;

(B) explain device vulnerabilities and security solutions on networks such as supply chain security and counterfeit products;

(C) compare and contrast protocols such as HTTP versus HTTPS;

(D) debate the broadcasting or hiding of a wireless service set identifier (SSID); and

(E) research and discuss threats such as mandatory access control (MAC) spoofing and packet sniffing.

(17) Vulnerabilities, threats, and attacks. The student analyzes threats to computer applications. The student is expected to:

(A) define application security;

(B) identify methods of application security such as secure development policies and practices;

(C) explain the purpose and function of vulnerability scanners;

(D) explain how coding errors may create system vulnerabilities such as buffer overflows and lack of input validation; and

(E) analyze the risks of distributing insecure programs.

(18) Risk assessment. The student understands risk and how risk assessment and risk management defend against attacks. The student is expected to:

(A) define commonly used risk assessment terms, including risk, asset, and inventory;

(B) identify risk management strategies, including acceptance, avoidance, transference, and mitigation; and

(C) compare and contrast risks based on an industry accepted rubric or metric such as Risk Assessment Matrix.

§127.677. Digital Forensics (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Prerequisite: Foundations of Cybersecurity. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Digital forensics is a critical discipline concerned with analyzing anomalous activity on computers, networks, programs, and data. As a discipline, it has grown with the expansion of a globally connected digital society. As computing has become more sophisticated, so too have the abilities to access systems and sensitive information. Digital forensics professionals investigate and craft appropriate responses to disruptions to governments, organizations, and individuals. Whereas cybersecurity takes a proactive approach to information assurance to minimize harm, digital forensics takes a reactive approach to incident response.

(4) Digital Forensics introduces students to the knowledge and skills of digital forensics. The course provides a survey of the field of digital forensics and incident response.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employment opportunities. The student identifies various employment opportunities in the digital forensics field. The student is expected to:

(A) investigate the need for digital forensics;

(B) identify and discuss certifications for digital forensics careers;

(C) identify and describe businesses and government agencies that use digital forensics; and

(D) identify and describe the kinds of crimes investigated by digital forensics specialists.

(2) Ethics and laws. The student recognizes and analyzes ethical and current legal standards, rights, and restrictions related to digital forensics. The student is expected to:

(A) develop a plan to advocate for ethical and legal behaviors both online and offline among peers, family, community, and employers;

(B) research and discuss local, state, national, and international law such as the Electronic Communications Privacy Act of 1986, Title III (Pen Register Act); USA PATRIOT Act of 2001; and Digital Millennium Copyright Act;

(C) research and discuss historic cases or events regarding digital forensics or cybersecurity;

(D) analyze ethical and legal behavior when presented with confidential or sensitive information in various scenarios related to cybersecurity activities;

(E) analyze case studies of computer incidents;

(F) use the findings of a computer incident investigation to reconstruct a computer incident;

(G) identify and discuss intellectual property laws, issues, and use;

(H) contrast legal and illegal aspects of information gathering;

(I) contrast ethical and unethical aspects of information gathering;

(J) analyze emerging legal and societal trends affecting digital forensics; and

(K) discuss how technological changes affect applicable laws.

(3) Digital citizenship. The student understands and demonstrates the social responsibility of end users regarding digital technology, safety, digital hygiene, and cyberbullying. The student is expected to:

(A) identify and use digital information responsibly;

(B) use digital tools responsibly;

(C) identify and use valid and reliable sources of information; and

(D) gain informed consent prior to investigating incidents.

(4) Digital forensics skills. The student locates, processes, analyzes, and organizes data. The student is expected to:

(A) identify sources of data;

(B) analyze and report data collected;

(C) discuss how to maintain data integrity such as by enabling encryption;

(D) examine and describe metadata of a file; and

(E) examine and describe how multiple data sources can be used for digital forensics, including investigating malicious software (malware) and email threats.

(5) Digital forensics skills. The student understands software concepts and operations as they apply to digital forensics. The student is expected to:

(A) compare software applications as they apply to digital forensics;

(B) describe the purpose of various application types such as email, web, file sharing, security applications, and data concealment tools;

(C) identify the different purposes of data formats such as pdf, wav, jpeg, and exe;

(D) describe how application logs and metadata are used for investigations such as Security Information and Event Management (SIEM) reports;

(E) describe digital forensics tools;

(F) select the proper software tool based on appropriateness, effectiveness, and efficiency for a given digital forensics scenario;

(G) describe components of applications such as configurations settings, data, supporting files, and user interface; and

(H) describe how the "as a service" model applies to incident response.

(6) Digital forensics skills. The student understands operating systems concepts and functions as they apply to digital forensics. The student is expected to:

(A) compare various operating systems;

(B) describe file attributes, including access and creation times;

(C) describe how operating system logs are used for investigations;

(D) compare and contrast the file systems of various operating systems;

(E) compare various primary and secondary storage devices; and

(F) differentiate between volatile and non-volatile memory.

(7) Digital forensics skills. The student understands networking concepts and operations as they apply to digital forensics. The student is expected to:

(A) examine networks, including Internet Protocol (IP) addressing and subnets;

(B) describe the Open Systems Interconnection (OSI) model;

(C) describe the Transmission Control Protocol/Internet Protocol (TCP/IP) model;

(D) use network forensic analysis tools to examine network traffic data from sources such as firewalls, routers, intrusion detection systems (IDS), and remote access logs; and

(E) identify malicious or suspicious network activities such as mandatory access control (MAC) spoofing and rogue wireless access points.

(8) Digital forensics skills. The student explains the principles of access controls. The student is expected to:

(A) define the principle of least privilege;

(B) describe the impact of granting access and permissions;

(C) identify different access components such as passwords, tokens, key cards, and biometric verification systems;

(D) explain the value of an access log to identify suspicious activity;

(E) describe the risks of granting third parties access to personal and proprietary data on social media and systems;

(F) describe the risks involved with accepting Terms of Service (ToS) or End User License Agreements (EULA) without a basic understanding of the terms or agreements; and

(G) identify various access control methods such as mandatory access control (MAC), attribute-based access control (ABAC), role-based access control (RBAC), and discretionary access control (DAC).

(9) Incident response. The student follows a methodological approach to prepare for and respond to an incident. The student is expected to:

(A) define the components of the incident response cycle, including preparation; detection and analysis; containment, eradication, and recovery; and post-incident activity;

(B) describe incident response preparation;

(C) discuss incident response detection and analysis;

(D) discuss containment and eradication of and recovery from an incident;

(E) describe post-incident activities such as reflecting on lessons learned, using collected incident data, and retaining evidence of an incident;

(F) develop an incident response plan; and

(G) describe ways a user may compromise the validity of existing evidence.

(10) Incident response. The student objectively analyzes collected data from an incident. The student is expected to:

(A) identify the role of chain of custody in digital forensics;

(B) describe safe data handling procedures;

(C) explain the fundamental concepts of confidentiality, integrity, availability, authentication, and authorization;

(D) identify and report information conflicts or suspicious activity;

(E) identify events of interest and suspicious activity by examining network traffic; and

(F) identify events of interest and suspicious activity by examining event logs.

(11) Incident response. The student analyzes the various ways systems can be compromised. The student is expected to:

(A) analyze the different signatures of cyberattacks;

(B) identify points of weakness and attack vectors such as online spoofing, phishing, and social engineering; and

(C) differentiate between simple versus multistage attacks.

§127.678. Cybersecurity Capstone (One Credit), Adopted 2022.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Foundations of Cybersecurity. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging foundations.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Cybersecurity is a critical discipline concerned with safeguarding computers, networks, programs, and data from unauthorized access. As a field, it has gained prominence with the expansion of a globally connected society. As computing has become more sophisticated, so too have the abilities of adversaries looking to penetrate networks and access sensitive information. Cybersecurity professionals prevent, detect, and respond to minimize disruptions to governments, organizations, and individuals.

(4) In the Cybersecurity Capstone course, students will develop the knowledge and skills needed to explore advanced concepts related to the ethics, laws, and operations of cybersecurity. Students will examine trends and operations of cyberattacks, threats, and vulnerabilities. Students will develop security policies to mitigate risks. The skills obtained in this course prepare students for additional study toward industry certification. A variety of courses are available to students interested in the cybersecurity field. Cybersecurity Capstone may serve as a culminating course in this field of study.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Employability skills. The student identifies various employment opportunities in the cybersecurity field. The student is expected to:

(A) develop a personal career plan along with the education, job skills, and experience necessary to achieve career goals;

(B) develop a resume or a portfolio appropriate to a chosen career plan; and

(C) demonstrate interview skills for successful job placement.

(2) Ethics and laws. The student evaluates ethical and current legal standards, rights, and restrictions governing technology, technology systems, digital media and information technology, and the use of social media in the context of today's society. The student is expected to:

(A) analyze and apply to a scenario local, state, national, and international cybersecurity laws such as David's Law and Digital Millennium Copyright Act;

(B) evaluate noteworthy incidents or events regarding cybersecurity; and

(C) evaluate compliance requirements such as Section 508 of the Rehabilitation Act of 1973, Family Educational Rights and Privacy Act of 1974 (FERPA), Health Insurance Portability and Accountability Act of 1996 (HIPAA), Gramm-Leach-Bliley Act (GLBA), and Cybersecurity Maturity Model Certification (CMMC).

(3) Digital citizenship. The student understands and demonstrates the social responsibility of end users regarding significant issues relating to digital technology, safety, digital hygiene, and cyberbullying. The student is expected to:

(A) debate the relationship between privacy and security; and

(B) differentiate between ethical and unethical behavior when presented with various scenarios related to cybersecurity activities.

(4) Cybersecurity skills. The student simulates the process of penetration testing. The student is expected to:

(A) illustrate the phases of penetration testing, including plan, discover, attack, and report;

(B) design a plan to gain authorization for penetration testing;

(C) evaluate commonly used vulnerability scanning tools such as port scanning, packet sniffing, and password crackers;

(D) develop a list of exploits based on results of scanning tool reports; and

(E) prioritize a list of mitigations based on results of scanning tool reports.

(5) Cybersecurity skills. The student understands common cryptographic methods. The student is expected to:

(A) evaluate symmetric and asymmetric algorithms such as substitution cipher, Advanced Encryption Standard (AES), Diffie-Hellman, and Rivest-Shamir-Adleman (RSA);

(B) interpret the purpose of hashing algorithms, including blockchain;

(C) demonstrate password salting;

(D) explain and create a digital signature; and

(E) illustrate steganography.

(6) Cybersecurity skills. The student understands the concept of system defense. The student is expected to:

(A) explain the purpose of establishing system baselines;

(B) evaluate the role of physical security;

(C) evaluate the functions of network security devices such as firewalls, intrusion detection systems (IDS), intrusion prevention systems (IPS), intrusion detection prevention systems (IDPS), and security information and event management (SIEM) systems;

(D) analyze log files for anomalies; and

(E) develop a plan demonstrating the concept of defense in depth.

(7) Cybersecurity skills. The student demonstrates an understanding of secure network design. The student is expected to:

(A) explain the benefits of network segmentation, including sandboxes, air gaps, and virtual local area networks (VLAN);

(B) investigate and discuss the role of software-managed networks, including virtualization and cloud architecture;

(C) evaluate the role of honeypots and honeynets in networks; and

(D) create an incoming and outgoing network policy for a firewall.

(8) Cybersecurity skills. The student integrates principles of digital forensics. The student is expected to:

(A) identify cyberattacks by their signatures, indicators, or patterns;

(B) explain proper data acquisition;

(C) examine evidence from devices for suspicious activities; and

(D) critique current cybercrime cases involving digital forensics.

(9) Cybersecurity skills. The student explores expanding and emerging technology. The student is expected to:

(A) describe the concept of Security as a Service and the role of managed security service providers (MSSP);

(B) describe the integration of artificial intelligence and machine learning in cybersecurity;

(C) investigate impacts made by predictive analytics on cybersecurity; and

(D) research and investigate other emerging trends such as augmented reality and quantum computing.

(10) Cybersecurity skills. The student uses various operating system environments. The student is expected to:

(A) select and execute appropriate commands via the command line interface (CLI) such as ls, cd, pwd, cp, mv, chmod, ps, sudo, and passwd;

(B) describe the file system structure for multiple operating systems;

(C) manipulate and edit files within the CLI; and

(D) determine network status using the CLI with commands such as ping, ifconfig/ipconfig, traceroute/tracert, and netstat.

(11) Cybersecurity skills. The student clearly and effectively communicates technical information. The student is expected to:

(A) collaborate with others to create a technical report;

(B) create, review, and edit a report summarizing technical findings; and

(C) present technical information to a non-technical audience.

(12) Risk assessment. The student understands risk and how risk assessment and risk management defend against attacks. The student is expected to:

(A) differentiate types of attacks, including operating systems, software, hardware, network, physical, social engineering, and cryptographic;

(B) explain blended threats such as combinations of software, hardware, network, physical, social engineering, and cryptographic;

(C) discuss types of risk, including business, operational, security, and financial;

(D) discuss risk response techniques, including accept, transfer, avoid, and mitigate;

(E) develop a plan of preventative measures based on discovered vulnerabilities and the likelihood of a cyberattack;

(F) identify and discuss common vulnerability disclosure websites;

(G) describe common web vulnerabilities such as cross-site scripting, buffer overflow, injection, spoofing, and denial of service;

(H) describe common data destruction and media sanitation practices such as wiping, shredding, and degaussing; and

(I) develop an incident response plan for a given scenario or attack.

(13) Risk assessment. The student understands risk management processes and concepts. The student is expected to:

(A) describe Zero Trust, least privilege, and various access control methods such as mandatory access control (MAC), role-based access control (RBAC), and discretionary access control (DAC);

(B) develop and defend a plan for multi-factor access control using components such as biometric verification systems, key cards, tokens, and passwords; and

(C) review and appraise a disaster recovery plan (DRP) that includes backups, redundancies, system dependencies, and alternate sites.

(14) Risk assessment. The student investigates the role and effectiveness of environmental controls. The student is expected to:

(A) explain commonly used physical security controls, including lock types, fences, barricades, security doors, and mantraps; and

(B) describe the role of embedded systems such as fire suppression; heating, ventilation, and air conditioning (HVAC) systems; security alarms; and video monitoring.

§127.679. Computer Maintenance (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Information Technology. Recommended corequisite: Computer Maintenance Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Computer Maintenance, students will acquire knowledge of computer maintenance and creating appropriate documentation. Students will analyze the social responsibility of business and industry regarding the significant issues relating to the environment, ethics, health, safety, and diversity in society and in the workplace as related to computer maintenance. Students will apply technical skills to address the IT industry and emerging technologies.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) identify job opportunities and accompanying job duties and tasks; and

(B) examine the role of certifications, resumes, and portfolios in the IT profession.

(2) The student applies academic skills to the requirements of computer technologies. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures such as fellow workers, management, and customers; and

(B) interpret appropriate documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(3) The student acquires an understanding of computer hardware technologies. The student is expected to:

(A) explain the fundamentals of microprocessor theory;

(B) define the use of Boolean and Binary logic in computer technologies;

(C) explain the theories of magnetism, electricity, and electronics as related to computer technologies;

(D) explain proper troubleshooting techniques as related to computer hardware;

(E) differentiate among digital and analog input and output electronics theory;

(F) explain the relationships relative to data-communications theory;

(G) describe the architecture of various computer systems;

(H) describe the function of computer components such as central processing units, storage devices, and peripheral devices;

(I) explain computer system environmental requirements and related control devices; and

(J) identify new and emerging technologies that may affect the field of computer technology.

(4) The student uses hardware design, operation, and maintenance knowledge and skills to identify major computer components. The student is expected to:

(A) identify the purpose and function of computer components in the operation of the computer system such as central processing unit, mother board, sockets, chipsets, basic input and output system and their drivers, memory, hard drive technologies, video cards, input and output devices and ports, and modem and network interface cards (NIC);

(B) identify how mobile devices such as personal data assistants and cell phones operate;

(C) identify how mobile devices such as personal data assistants and cell phones connect and share data;

(D) demonstrate an understanding of the rationale behind error messages and symptoms of hardware failures;

(E) research interrupt sequences and beep codes; and

(F) identify priorities and interrupts at the system level.

(5) The student acquires knowledge of operating system design, including operation and maintenance. The student is expected to:

(A) explain the fundamentals of an operating system;

(B) compare and contrast different operating systems; and

(C) identify the operating systems of mobile devices.

(6) The student acquires knowledge of the theory behind the installation, configuration of software programs, and updates in IT systems. The student is expected to:

(A) identify the operational features and proper terminology related to computer software systems;

(B) evaluate application software packages;

(C) verify that software is properly licensed prior to installation;

(D) differentiate between types of software such as Software as a Service, single-user, per-seat, enterprise, freeware, shareware, and open-source licensing; and

(E) explain proper troubleshooting techniques related to computer software.

(7) The student acquires knowledge of the installation and configuration of network connections. The student is expected to:

(A) explain the fundamentals of network connections and interface requirements;

(B) explain the steps required to install and configure a computer on a network; and

(C) identify the steps to troubleshoot network connectivity.

§127.680. Computer Maintenance Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Information Technology. Corequisite: Computer Maintenance. This course must be taken concurrently with Computer Maintenance and may not be taken as a stand-alone course. Districts are encouraged to offer this course in a consecutive block with Computer Maintenance to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Computer Maintenance Lab, students will acquire knowledge of computer maintenance and creating appropriate documentation. Students will analyze the social responsibility of business and industry regarding the significant issues relating to the environment, ethics, health, safety, and diversity in society and in the workplace as related to computer maintenance. Students will apply technical skills to address the IT industry and emerging technologies.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) demonstrate work behaviors that enhance employability and job advancement such as regular attendance, promptness, attention to proper attire, maintenance of a clean and safe work environment, appropriate voice, and pride in work;

(B) demonstrate positive personal qualities such as flexibility, open mindedness, initiative, listening attentively to speakers, and willingness to learn new skills;

(C) employ effective reading and writing skills;

(D) employ effective verbal and nonverbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) identify and implement proper safety procedures;

(H) demonstrate an understanding of legal and ethical responsibilities in relation to the field of IT; and

(I) demonstrate planning and time-management skills such as project management, including initiating, planning, executing, monitoring and controlling, and closing a project.

(2) The student applies academic skills to the requirements of computer technologies. The student is expected to:

(A) complete work orders for repair and installation;

(B) estimate supplies, materials, and labor costs for installation, maintenance, and repair work orders; and

(C) locate and interpret appropriate documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(3) The student demonstrates the proper function and application of the tools, equipment, and materials used in computer technologies. The student is expected to:

(A) demonstrate safe use of equipment in computer technologies such as hand and power tools;

(B) employ available reference documentation such as tools, materials, and Internet sources to access information as needed;

(C) demonstrate proper handling and disposal of environmentally hazardous materials used in computer technologies; and

(D) research new and emerging technologies that may affect the field of computer technology.

(4) The student applies the concepts and skills of the trade in simulated work situations. The student is expected to:

(A) use electronic test equipment to measure current, voltage, power, and resistance;

(B) describe digital circuits and bus design;

(C) demonstrate the operational features and proper terminology related to computer systems;

(D) demonstrate proper usage of the various components of a computer system such as the central processor, basic input and output system, read-only memory, and random access memory; and

(E) troubleshoot computer peripheral devices.

(5) The student uses hardware design, operation, and maintenance knowledge and skills to identify major computer components. The student is expected to:

(A) assemble and install a basic computer system; and

(B) install and configure computer components such as printers and other peripherals.

(6) The student uses troubleshooting skills to solve client problems. The student is expected to:

(A) diagnose error messages and symptoms of hardware failures;

(B) research and identify interrupt sequences and beep codes;

(C) identify priorities and interrupts at the system level;

(D) test a system using diagnostic tools and software;

(E) diagnose problems in operating systems;

(F) differentiate between hardware and software failure;

(G) update Basic Input/Output System (BIOS);

(H) demonstrate hard drive maintenance procedures such as defrag scan and clear caches;

(I) gather information from the user;

(J) repair malfunctioning hardware systems;

(K) reinstall software as needed;

(L) demonstrate system backup and recovery;

(M) restore a system to various states such as safe modes and previous;

(N) demonstrate knowledge of operating system design such as operation and maintenance; and

(O) apply knowledge of operating system design to perform information support and service tasks of different operating systems.

(7) The student installs and configures software programs and updates IT systems. The student is expected to:

(A) evaluate application software packages and test the functionality of a proposed software configuration;

(B) verify software is properly licensed prior to installation;

(C) install application and systems software using available resources as needed;

(D) resolve problems with installation if any occur such as recovery from system error;

(E) perform software customization as requested;

(F) document all procedures; and

(G) install and maintain security software.

(8) The student installs, configures, and verifies active network connection. The student is expected to:

(A) demonstrate an understanding of network connection and interface requirements;

(B) install and configure a computer on a network; and

(C) verify and troubleshoot network connectivity.

(9) The student provides support to computer users to maintain service. The student is expected to:

(A) develop a written disaster recovery plan; and

(B) develop a written preventive maintenance plan.

§127.681. Networking (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab. Recommended corequisite: Networking Lab. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Networking, students will develop knowledge of the concepts and skills related to data networking technologies and practices in order to apply them to personal or career development. To prepare for success, students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) select and research a specific job area with its accompanying duties and tasks;

(B) formulate a personal career plan along with the education, job skills, and experience necessary to achieve career goals; and

(C) develop a resume.

(2) The student relates core academic skills to the requirements of telecommunications and data network services. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) complete work orders for repair and installation;

(C) estimate supplies, materials, and labor costs on installation, maintenance, and repair work orders; and

(D) interpret technical documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(3) The student acquires an understanding of telecommunications and data network services. The student is expected to:

(A) explain digital and analog electronics theory;

(B) demonstrate knowledge of binary in relation to Internet Protocol (IP) addressing;

(C) distinguish the differences between a data packet and voice communications;

(D) define the layers and functions of the Open System Interconnection model;

(E) explain Transport Control Protocol and IP fundamentals, including subnetting;

(F) distinguish between public and private networks;

(G) describe the standards and operations of wireless technologies in telecommunications and data networks;

(H) differentiate between types of networks;

(I) identify national standards for data communication; and

(J) identify the potential benefits and problems for the future of telecommunications and data networking.

(4) The student analyzes various types of configurations and upgrading. The student is expected to:

(A) demonstrate understanding of components of telecommunications and data networks;

(B) identify major network operating systems;

(C) distinguish between different types of cables used in the telecommunications and data networking;

(D) describe telecommunications and data networking media and connectors;

(E) differentiate among computer network topologies;

(F) explain the distinction between connectionless and connection transport;

(G) explain the use of Transport Control Protocol and IP utilities;

(H) explain how to test, validate, and troubleshoot IP connectivity; and

(I) identify good practices to ensure network security.

(5) The student recognizes and recommends the various types of network components to address industry needs. The student is expected to:

(A) analyze various types and components of networks; and

(B) analyze the characteristics of networks to select the optimum configuration for an industry solution.

(6) The student develops a network design plan. The student is expected to:

(A) produce planning documentation required prior to network implementation;

(B) explain the impact of environmental factors on computer networks;

(C) identify common peripheral ports and common network components such as hubs, routers, and switches;

(D) develop an addressing scheme, including a subnetting chart;

(E) specify the tools that are commonly used to resolve network equipment problems;

(F) identify vendor testing documentation such as patches, fixes, and upgrades;

(G) demonstrate standard backup procedures and backup media storage practices; and

(H) identify the factors that might affect performance in a network environment such as logic or frequency spectrum interference.

(7) The student provides support to computer users to maintain service. The student is expected to:

(A) develop a written disaster recovery plan; and

(B) develop a written preventive maintenance plan.

§127.682. Networking Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Information Technology, Computer Maintenance, and Computer Maintenance Lab. Corequisite: Networking. This course must be taken concurrently with Networking and may not be taken as a stand-alone course. Districts are encouraged to offer this course in a consecutive block with Networking to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Networking Lab, students will develop knowledge of the concepts and skills related to telecommunications and data networking technologies and practices in order to apply them to personal or career development. To prepare for success, students must have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) identify and demonstrate work behaviors that enhance employability and job advancement such as regular attendance, promptness, attention to proper attire, maintenance of a clean and safe work environment, appropriate voice, and pride in work;

(B) identify and demonstrate positive personal qualities such as flexibility, open-mindedness, initiative, listening attentively to speakers, and willingness to learn new knowledge and skills;

(C) employ effective reading and writing skills;

(D) employ effective verbal and nonverbal communication skills;

(E) solve problems and think critically;

(F) demonstrate leadership skills and function effectively as a team member;

(G) identify and implement proper safety procedures;

(H) demonstrate an understanding of legal and ethical responsibilities in relation to the field of IT; and

(I) demonstrate planning and time-management skills such as project management, including initiating, planning, executing, monitoring and controlling, and closing a project.

(2) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) select and research a specific job area with its accompanying duties and tasks;

(B) formulate a personal career plan along with the education, job skills, and experience necessary to achieve career goals; and

(C) develop a resume.

(3) The student applies related core academic skills to the requirements of telecommunications and data network services. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) complete work orders for repair and installation;

(C) estimate supplies, materials, and labor costs on installation, maintenance, and repair work orders; and

(D) interpret technical documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(4) The student recognizes and recommends the various types of network components to address industry needs. The student is expected to:

(A) analyze various types and components of networks;

(B) use knowledge of the characteristics of networks to select the optimum configuration for an industry solution; and

(C) recommend data network solutions based on scenario-driven problems.

(5) The student develops a network design plan. The student is expected to:

(A) produce necessary documentation required prior to network implementation such as administrative and test accounts, passwords, Internet Protocol addressing, and configurations;

(B) analyze the impact of environmental factors on computer networks;

(C) indicate common peripheral ports and common network components;

(D) develop an addressing scheme, including a subnetting chart;

(E) specify the tools that are commonly used to resolve network equipment problems;

(F) identify vendor testing documentation such as patches, fixes, and upgrades;

(G) demonstrate awareness of standard backup procedures and backup media storage practices;

(H) distinguish between common types of telecommunications and data network cabling;

(I) identify the factors that might affect performance in a network environment such as logic or frequency spectrum interference; and

(J) research new and emerging technologies that may affect the field of telecommunications and data networking services.

(6) The student implements a data network plan. The student is expected to:

(A) demonstrate awareness of compatibility and cabling issues;

(B) implement an addressing scheme, including a subnet;

(C) install various types of data connectors and cabling used in computer networking and data communications;

(D) connect various types of data connectors and cabling used in computer networking and data communications;

(E) troubleshoot physical and logical indicators of trouble;

(F) employ a systematic approach to identify a network problem, distinguish between operator or system error, and select the appropriate steps to correct the error;

(G) determine the cause of a problem and select the appropriate corrective action for the network problem; and

(H) maintain a hierarchical structure for the storing and organizing of data on networks.

(7) The student implements network security systems. The student is expected to:

(A) assess potential security threats to information systems;

(B) identify the range of security needs and the problems that can occur on a data network due to security lapses;

(C) define and identify unethical practices such as hacking, phone fraud, online piracy, and data vandalism;

(D) evaluate issues related to privacy, depersonalization, and government control of data communications;

(E) develop and implement a network security plan; and

(F) identify the role that network components such as routers, firewalls, intrusion detection systems, and virtual private networks play in security.

(8) The student knows the function and application of the tools, equipment, technologies, and materials used in telecommunications services. The student is expected to:

(A) demonstrate safe use of equipment commonly employed in telecommunications services such as hand and power tools; and

(B) demonstrate proper handling and disposal of environmentally hazardous materials used in telecommunications services.

(9) The student provides support to computer users to maintain service. The student is expected to:

(A) develop a written disaster recovery plan; and

(B) develop a written preventive maintenance plan.

§127.683. Digital Media (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Digital Media, students will analyze and assess current and emerging technologies, while designing and creating multimedia projects that address customer needs and resolve a problem. Students will implement personal and interpersonal skills to prepare for a rapidly evolving workplace environment. The knowledge and skills acquired and practiced will enable students to successfully perform and interact in a technology-driven society. Students will enhance reading, writing, computing, communication, and critical thinking and apply them to the IT environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies employment opportunities in the IT field with a focus in the area of digital media. The student is expected to:

(A) identify job opportunities and accompanying job duties and tasks;

(B) research careers of personal interest along with the education, job skills, and experience required to achieve personal career goals;

(C) demonstrate an understanding of the functions of resumes and portfolios; and

(D) create a digital portfolio.

(2) The student uses emerging technologies to exchange and gather information and resources. The student is expected to:

(A) collaborate using various electronic technologies such as email, blogs, chat rooms, discussion threads, social media, podcasting, and wikis;

(B) demonstrate appropriate search strategies for finding resources or assets on the Internet;

(C) discuss recent digital media technologies; and

(D) evaluate and select appropriate software for the development of projects.

(3) The student complies with standard practices and behaviors that meet legal and ethical responsibilities. The student is expected to:

(A) explain and demonstrate ethical use of technology and online resources;

(B) compare and contrast fair use, open source, and creative commons;

(C) adhere to intellectual property laws and regulations;

(D) differentiate between copyright and trademarks;

(E) explain the concept of intellectual property laws, including copyright, trademarks, and patents and consequences of violating each type of law;

(F) define and identify unethical practices such as hacking, online piracy, and data vandalism;

(G) demonstrate ethical use of Internet and online resources, including citation of source; and

(H) describe the function of a non-disclosure agreement and intellectual property agreement.

(4) The student analyzes and applies design and layout principles in digital media. The student is expected to:

(A) compare and contrast printed and digital communications products that demonstrate appropriate and inappropriate use of design and layout principles;

(B) identify and apply perspective such as backgrounds, light, shades, shadows, and scale to capture a focal point and create depth;

(C) identify and apply principles of proportion, balance, variety, emphasis, harmony, symmetry, unity, and repetition in type, color, size, line thickness, shape, and space;

(D) identify and apply three-dimensional effects such as foreground, middle distance, and background images;

(E) identify and apply concepts of typography;

(F) identify and apply color theory; and

(G) create and improve digital products by applying the appropriate design and layout principles.

(5) The student designs and creates digital graphics. The student is expected to:

(A) compare and contrast the characteristics of raster-based bitmap graphics and vector-based graphics;

(B) create and modify digital graphics using appropriate vector-based and raster-based software following standard design principles;

(C) export and set graphics to be used in both print and digital formats;

(D) demonstrate knowledge of graphic resolution, file size, file formats, and file management;

(E) determine the type of data stored in a file based on its file extension and select appropriate software to modify, create, and view the file; and

(F) differentiate between the color mode selections in determining product output.

(6) The student demonstrates appropriate use of digital photography equipment and techniques. The student is expected to:

(A) demonstrate proper use of safety procedures while using digital photography equipment;

(B) capture still shot images using digital photography equipment incorporating various photo composition techniques such as lighting, perspective, candid versus posed, rule of thirds, and level of horizon;

(C) transfer still shot images from equipment to the computer; and

(D) demonstrate photographic enhancement techniques such as feathering, layering, masking, and color enhancement using appropriate photo editing software.

(7) The student demonstrates appropriate use of video equipment and techniques. The student is expected to:

(A) demonstrate proper use of safety procedures while using digital video equipment;

(B) demonstrate proper use of terminology in relation to video technology;

(C) demonstrate proper ethics in the use of digital video photography equipment to capture video images;

(D) transfer video images from equipment to the computer;

(E) apply videographic enhancement and editing techniques such as panning, transitioning, zooming, content editing, and synchronizing audio and video using appropriate digital manipulation software; and

(F) export video files in digital formats to be used in various delivery systems such as podcasts, downloadable media, social media, and streaming video.

(8) The student demonstrates appropriate use of audio equipment and techniques. The student is expected to:

(A) demonstrate proper use of safety procedures while using digital audio equipment;

(B) demonstrate proper use of terminology and concepts in relation to audio technology;

(C) demonstrate proper use of digital audio equipment to capture audio files;

(D) transfer audio files from equipment to the computer;

(E) demonstrate proper use of audio editing software such as adding effects, fading, volume control, and manipulation of waveforms using appropriate digital manipulation software; and

(F) export audio files to be used in digital formats in various delivery systems such as podcasts, downloadable files, social media, and streaming video.

(9) The student demonstrates appropriate use of animation. The student is expected to:

(A) plan and create a linear and non-linear animation using accepted standards such as design principles, frames and key frames, integration of audio into an animation, and user interactive controls;

(B) deploy animation to be used in various digital formats and on various video animation players; and

(C) create an interactive animation.

(10) The student demonstrates appropriate project management in the creation of digital media projects. The student is expected to:

(A) initiate a project, including identifying the purpose, audience, and audience needs for design plans;

(B) develop a plan for a media project such as a storyboard and stage development and identify equipment and resources;

(C) execute and monitor and control a project along its timeline and make suggested revisions until completion of the project; and

(D) close a project, including identifying lessons learned.

(11) The student deploys digital media into print, web-based, and video products. The student is expected to:

(A) incorporate video, audio, text, graphics, and animations into a web page;

(B) incorporate various digital media products into an electronic document such as a newsletter, social media outlet, poster, or report; and

(C) incorporate various digital media products into an interactive product such as an animation, computer program, simulation, interactive website, or application.

§127.684. Web Communications (One-Half Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one-half credit for successful completion of this course. This course is recommended for students in Grade 9.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Web Communications, students will acquire knowledge of web communications and technological operations and concepts. This is an exploratory course in web communications. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) demonstrate proficiency in the use of local and online collaboration;

(B) create websites using web editors or web authoring programs;

(C) evaluate the accessibility and usability of original websites; and

(D) conceptualize possible technologies based on current technical trends.

(2) Communication and collaboration. The student uses digital technology to work collaboratively toward his or her own learning and the learning of others. The student is expected to:

(A) analyze and implement the proper and acceptable use of digital/virtual communications technologies such as instant messaging (IM), chat, email, and social networking;

(B) define and implement the acquisition, sharing, and use of files taking into consideration primary ownership and copyright;

(C) apply decisions regarding the selection, acquisition, and sharing of uniform resource locators (URLs) used in research, taking into consideration their quality, appropriateness, and effectiveness; and

(D) solve problems using critical-thinking strategies.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) verify the accuracy, validity, and currency of acquired information;

(B) conduct effective searches using Boolean operators;

(C) acquire and use appropriate vocabulary terms;

(D) cite sources appropriately using established methods;

(E) model ethical and legal acquisition of digital information following guidelines in the student code of conduct, including plagiarism and copyright laws;

(F) identify and discuss emerging technologies and their impact;

(G) understand Internet history and structure and how they impact current use; and

(H) demonstrate appropriate use of grammar, spelling, and vocabulary when creating original work.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) demonstrate the transfer and adaptation of knowledge through the creation of original work;

(B) evaluate and implement security measures such as firewalls and Hypertext Transfer Protocol Secure (HTTPS) to protect original work;

(C) analyze and follow timelines needed to create, edit, and present original work;

(D) verify current licensing issues for software being used for the creation of original work;

(E) identify and evaluate the design and functionality of web pages using rubrics;

(F) optimize web information for fast download such as dial-up and high-speed Internet and mobile devices; and

(G) evaluate original work through self-, peer, and professional review of websites.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) engage in online activities that follow appropriate behavioral, communication, and privacy guidelines, including ethics, personal security, and verbiage determined by the intended audience;

(B) understand the negative impact of inappropriate technology use, including online bullying and harassment;

(C) implement online security guidelines, including identity protection, limited personal information sharing, and password protection of a secure website; and

(D) advocate and practice safe, legal, and responsible use of information and technology.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge of hardware such as scanners, cameras, printers, video cameras, and external hard drives;

(B) identify the parts of a computer and explain their functions;

(C) summarize the need, functionality, and use of servers;

(D) identify the advantages and disadvantages of running a personal web server versus using a web server provider;

(E) differentiate and appropriately use various input, processing, output, and primary/secondary storage devices;

(F) create and implement universally accessible documents;

(G) analyze bandwidth issues as they relate to audience, servers, connectivity, and cost;

(H) establish a folder/directory hierarchy for storage of a web page and its related or linked files;

(I) follow file and folder naming conventions, including spacing, special characters, and capitalization; and

(J) identify basic design principles when creating a website.

§127.685. Web Design (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. This course is recommended for students in Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Web Design students will acquire knowledge of web design and technological operations and concepts that support creativity, innovation, collaboration, information fluency, critical thinking and decision making. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) demonstrate proficiency in local and online collaboration;

(B) create a website using web editors and web authoring programs;

(C) evaluate the accessibility and usability of an original website as it relates to a target audience;

(D) conceptualize new possible technologies based on current technical trends;

(E) analyze the use of virtualization such as virtual classrooms, distance learning, virtual storage, and a virtual operating system;

(F) demonstrate knowledge and appropriate use of operating systems, software applications, and communication and networking components; and

(G) make decisions regarding the selection, acquisition, and use of software, taking into consideration its quality, appropriateness, effectiveness, and efficiency.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) analyze and implement the proper and acceptable use of digital/virtual communications technologies such as instant messaging (IM), chat, email, and social networking;

(B) define and implement the acquisition, sharing, and use of files, taking into consideration their primary ownership and copyright;

(C) apply decisions regarding the selection, acquisition, and sharing of uniform resource locators (URLs) used in research, taking into consideration their quality, appropriateness, and effectiveness;

(D) solve problems using critical-thinking strategies; and

(E) compare, evaluate, and implement the use of wired versus wireless access.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) verify the accuracy, validity, and currency of acquired information;

(B) conduct effective searches with Boolean operators;

(C) acquire and use appropriate vocabulary terms;

(D) cite sources appropriately using established methods;

(E) model ethical and legal acquisition of digital information following guidelines in the student code of conduct, including plagiarism and copyright laws;

(F) identify and discuss emerging technologies and their impact;

(G) understand Internet history and structure and how they impact current use;

(H) demonstrate appropriate use of grammar, spelling, and vocabulary when creating original work;

(I) acquire, evaluate, and use various web standards such as World Wide Web Consortium (W3C), Ecma International, and Internet Corporation for Assigned Names and Numbers (ICANN) to make informed decisions and implement standards in original work;

(J) understand, analyze, and use interactive websites;

(K) understand, evaluate, and determine the appropriate use of dynamic and static websites;

(L) understand, evaluate, and determine the appropriate use of open/closed source file formats and software;

(M) explain and demonstrate how search engines work such as advanced options, preferences, advertising, and search categories;

(N) evaluate, create, and apply principles of project management, including web storyboards, site maps, job duties, time constraints, group dynamics, communication interaction, and project completion, evaluation, and feedback;

(O) understand the use and application of a virtual private network (VPN);

(P) distinguish among protocols, including Hypertext Transfer Protocol (HTTP) and File Transfer Protocol (FTP);

(Q) summarize the technical needs of a World Wide Web server, including random access memory (RAM), hard disk capacity, central processing unit (CPU) speed, busses, methods of connectivity, and appropriate software;

(R) demonstrate proficiency in the use of a variety of electronic input devices such as keyboard, scanner, voice/sound recorder, mouse, touch screen, or digital video by incorporating such components while publishing web pages;

(S) demonstrate proper digital etiquette and knowledge of acceptable use policies when using networks, especially resources on the Internet and intranets;

(T) demonstrate proficiency in and appropriate use and navigation of local area networks (LANs), wide area networks (WANs), the Internet, and intranets for research and resource sharing;

(U) construct appropriate search strategies in the acquisition of information from the Internet, including keyword searches and searches with Boolean operators; and

(V) acquire information in electronic formats, including text, audio, video, and graphics, citing the source.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) demonstrate the transfer and adaptation of knowledge through the creation of original work;

(B) evaluate and implement security measures to protect original work such as firewalls and Hypertext Transfer Protocol Secure (HTTPS);

(C) analyze and follow timelines needed to create, edit, and present original work;

(D) verify current licensing issues for software being used for the creation of original work;

(E) identify and evaluate the design and functionality of web pages using rubrics;

(F) optimize web information for fast download such as dial-up and high-speed Internet and mobile devices;

(G) evaluate original work through self-, peer, and professional review of websites;

(H) evaluate the types, functions, and target audiences of websites;

(I) read, use, and develop technical documents;

(J) analyze, examine, assess, and decide on servers as they relate to the management of a website;

(K) analyze, examine, assess, and decide on a web host;

(L) analyze, examine, assess, and decide on domain name acquisition and retention;

(M) evaluate the functionality of a website such as color scheme, grammar, technological constraints, age appropriateness, cross-platform usability, and user relevant criteria as it relates to an intended audience;

(N) identify software file formats and their characteristics and appropriate use;

(O) identify and apply search engine optimization (SEO) to ensure optimal website visibility;

(P) investigate and choose electronic security methods for a web server to protect from unauthorized access and negative intentions; and

(Q) draw conclusions from data gathered from electronic and telecommunication resources.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) engage in online activities that follow appropriate behavioral, communication, and privacy guidelines, including ethics, personal security, verbiage determined by the intended audience, and ethical use of files and file sharing;

(B) understand the negative impact of inappropriate technology use, including online bullying and harassment;

(C) implement online security guidelines, including identity protection, limited personal information sharing, and password protection of a secure website;

(D) engage in safe, legal, and responsible use of information and technology;

(E) understand and respond to local, state, national, and global issues to ensure appropriate cross-browser and cross-platform usability;

(F) interpret, use, and develop a safe online shared computing environment;

(G) identify legal, ethical, appropriate, and safe website marketing practices;

(H) identify legal, ethical, appropriate, and safe multimedia usage, including video, audio, graphics, animation, and emerging trends;

(I) analyze the impact of the World Wide Web on society through research, interviews, and personal observation; and

(J) participate in relevant and meaningful activities in the larger community and society to create electronic projects.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge of hardware, including scanners, cameras, printers, video cameras, and external hard drives;

(B) identify the parts of a computer and explain its functions;

(C) summarize the need for and functionality and use of servers;

(D) identify the advantages and disadvantages of running a personal web server versus using a web server provider;

(E) differentiate and appropriately use various input, processing, output, and primary/secondary storage devices;

(F) create and implement universally accessible documents;

(G) analyze bandwidth issues as related to audience, server, connectivity, and cost;

(H) establish a folder/directory hierarchy for storage of a web page and its related or linked files;

(I) create file and folder naming conventions to follow established guidelines, including spacing, special characters, and capitalization;

(J) identify basic design principles when creating a website, including white space, color theory, background color, shape, line, proximity, unity, balance (ratio of text to white space), alignment, typography, font size, type, style, image file size, repetition, contrast, consistency, and aesthetics;

(K) demonstrate knowledge of the six core domains (gov, net, com, mil, org, edu) and be familiar with new domain implementation;

(L) implement escape codes, HyperText Markup Language (HTML), cascading style sheets (CSS), and JavaScript through hard coding, web editors, and web authoring programs;

(M) identify and use FTP client software;

(N) implement java applet insertion;

(O) identify and differentiate various network topologies, including physical and logical;

(P) create, evaluate, and use web-based animation;

(Q) create, evaluate, and use video, including editing, compression, exporting, appropriateness, and delivery;

(R) demonstrate the ability to conduct secure communications from a web server to a client; and

(S) use hypertext linking appropriately when creating web pages.

§127.686. Discrete Mathematics for Computer Science (One Credit), Beginning with School Year 2012-2013.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2012-2013 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Prerequisite: Algebra II. This course is recommended for students in Grades 11 and 12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Discrete Mathematics for Computer Science provides the tools used in most areas of computer science. Exposure to the mathematical concepts and discrete structures presented in this course is essential in order to provide an adequate foundation for further study. Discrete Mathematics for Computer Science is generally listed as a core requirement for Computer Science majors. Course topics are divided into six areas: sets, functions, and relations; basic logic; proof techniques; counting basics; graphs and trees; and discrete probability. Mathematical topics are interwoven with computer science applications to enhance the students' understanding of the introduced mathematics. Students will develop the ability to see computational problems from a mathematical perspective. Introduced to a formal system (propositional and predicate logic) upon which mathematical reasoning is based, students will acquire the necessary knowledge to read and construct mathematical arguments (proofs), understand mathematical statements (theorems), and use mathematical problem-solving tools and strategies. Students will be introduced to discrete data structures such as sets, discrete functions, and relations and graphs and trees. Students will also be introduced to discrete probability and expectations. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:

(A) model algorithms and real-world situations using formal tools of symbolic logic;

(B) model computer science problems by using graphs and trees; and

(C) calculate the probabilities of events and expectations of random variables for such problems as games of chance.

(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) convert spoken language statements to appropriate statements in propositional logic;

(B) explain basic terminology of sets, functions, and relations;

(C) state the definition of the Master theorem;

(D) use the context of a particular application to interpret the meaning derived when computing the permutations and combinations of a set;

(E) interpret associated operations and terminology in context; and

(F) define and provide examples of logical equivalence, normal forms, validity, and modus ponens/modus tollens.

(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:

(A) construct truth tables for negation, conjunction, disjunction, implication, biconditional, and bit operators; and

(B) use truth tables to demonstrate propositional relations.

(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) analyze practical examples using appropriate models of sets, functions, and relations;

(B) compare and contrast tautology, contradiction, and contingency as related to propositional equivalences;

(C) compare and contrast examples and use of counterexamples, contrapositions, and contradictions;

(D) describe the appropriate use and limitations of predicate logic;

(E) apply formal methods of symbolic propositional and predicate logic;

(F) use formal logic proofs and logical reasoning to solve problems;

(G) outline the basic structure of proofs, including direct, indirect, contradiction, induction, existence, and constructive proofs;

(H) compare and contrast the types of problems best satisfied by direct, indirect, contradiction, induction, existence, and constructive proofs;

(I) relate mathematical induction to recursion and recursively defined structures;

(J) compare and contrast weak, strong, and structural induction, including when each is most appropriately used and examples of each;

(K) compare and contrast dependent and independent events;

(L) use recurrence equations to analyze algorithms and other practical problems;

(M) use counting techniques to analyze algorithms and other practical problems;

(N) apply probability tools to solve problems; and

(O) define, compare, and contrast simple graphs, multigraphs, and directed and undirected graphs using definitions, properties, and examples, including special cases.

(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:

(A) model ethical acquisition and use of digital information;

(B) demonstrate proper digital etiquette, responsible use of software, and knowledge of acceptable use policies; and

(C) investigate how the concepts of discrete mathematics are related to relevant problems and significant questions.

(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:

(A) perform operations associated with sets, functions, and relations;

(B) apply basic counting principles, including cardinality and the pigeonhole principle;

(C) apply appropriate precedence when using logical operators;

(D) use appropriate strategies, including De Morgan's Laws, to identify propositional equivalences;

(E) identify and appropriately use predicates, existential and universal quantifiers, and valid arguments;

(F) identify possible applications of proofs, including evaluating algorithmic complexity;

(G) state and appropriately use the product and sum rules;

(H) compute permutations and combinations of a set;

(I) solve a variety of basic recurrence equations;

(J) apply the binomial theorem to independent events;

(K) apply Bayes' theorem to dependent events;

(L) demonstrate transversal methods for trees and graphs; and

(M) relate graphs and trees to data structures, algorithms, and counting.

§127.687. Game Programming and Design (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Prerequisite: Algebra I. This course is recommended for students in Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Game Programming and Design will foster student creativity and innovation by presenting students with opportunities to design, implement, and present meaningful programs through a variety of media. Students will collaborate with one another, their instructor, and various electronic communities to solve gaming problems. Through data analysis, students will include the identification of task requirements, plan search strategies, and use programming concepts to access, analyze, and evaluate information needed to design games. By acquiring programming knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will create a computer game that is presented to an evaluation panel. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:

(A) understand the basic game design elements, including conceptual ideas, storyline, visualization, storyboard, game effects, sound elements, game play, game controls, and player tutorial;

(B) create a design concept document;

(C) create a storyboard;

(D) demonstrate an understanding of the fundamentals of game art, including the look and feel, graphics coordinate system, basics of color, and color palettes;

(E) use bitmap graphics images, including designing, creating, reading, and manipulating images;

(F) create backgrounds, including solid, image, and tiled backgrounds;

(G) write programs creating images using geometric shapes;

(H) create games using sprites by evaluating the role of sprites, creating sprites, and managing sprites;

(I) create programs using sprite sheets;

(J) demonstrate an understanding of image rendering, including transparency, refresh rate, hardware acceleration, and animation;

(K) find, create, and edit game audio sound effects and music; and

(L) implement game sound mechanics, including playing, pausing, and looping.

(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) design and implement procedures to set timelines for, track the progress of, and evaluate a game product;

(B) seek and respond to input from peers and professionals in evaluating a game project;

(C) demonstrate knowledge and appropriate use of operating systems, program development tools, and networking resources;

(D) use network resources to acquire, organize, maintain, and evaluate information;

(E) collaborate to research the business of games, including the roles of developer, marketing, publisher, and retail sales; and

(F) demonstrate an understanding of and evaluate online technology, including online interaction and massive multiplayer games.

(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:

(A) play board games to research and collect game play data;

(B) evaluate, analyze, and document game styles and playability; and

(C) research the dramatic elements in games, including kinds of fun, player types, and nonlinear storytelling.

(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) demonstrate an understanding of the game design process, including generating ideas, brainstorming, and paper prototyping;

(B) write programs using variables of different data types;

(C) evaluate game rules and instructions;

(D) demonstrate an understanding of the user experience by comparing rules and game-play patterns;

(E) write game rules and instructions;

(F) develop game software;

(G) write computer game code, resolve game defects, and revise existing game code; and

(H) test a finished game product by implementing sound testing techniques.

(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:

(A) explore intellectual property, privacy, sharing of information, copyright laws, and software licensing agreements;

(B) model ethical acquisition and use of digital information;

(C) demonstrate proper digital etiquette when using networks, responsible use of software, and knowledge of acceptable use policies;

(D) model respect of intellectual property, including manipulating graphics, morphing graphics, editing graphics, and editing sound;

(E) discuss and evaluate the social issues surrounding gaming; and

(F) evaluate the cultural aspects of game design fundamentals, including rationale for games and types of games.

(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to game programming. The student is expected to:

(A) identify basic game components, including the game engine, game play subsystems, data structures, models, and interfaces;

(B) generate random numbers in a program;

(C) create a program implementing conditional statements;

(D) develop an appropriate data model;

(E) demonstrate an understanding of and apply object-oriented game programming;

(F) demonstrate an understanding of game programming essentials, including event-driven programming, communicating with messages, and device management;

(G) demonstrate an understanding of the role of game events, the animation loop, and game timing;

(H) demonstrate an understanding of the role of game engines;

(I) demonstrate an understanding of video display flicker and double buffering;

(J) apply basic game screen design and layout, including visual controls, user interfaces, menus, and options;

(K) use game control design to understand, access, and control input devices, including keyboard, mouse, and joystick;

(L) demonstrate an understanding of and apply game animation, including the principles of animation and frame-based animation;

(M) demonstrate an understanding of decision making and types of decisions;

(N) demonstrate an understanding of game events, including listeners, triggers, and timed events;

(O) demonstrate an understanding of and implement collision detection, including bounding boxes and sprite collisions;

(P) implement a tile-based game, including loading tile maps, drawing tile maps, rendering a tile map, and layering sprites;

(Q) demonstrate an understanding of artificial intelligence and develop and implement artificial intelligence;

(R) demonstrate an understanding of game balance and tuning; and

(S) demonstrate an understanding of player progression, including leveling, linear progression, and maintaining high score data.

§127.688. Mobile Application Development (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Prerequisite: Algebra I. This course is recommended for students in Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) Mobile Application Development will foster students' creativity and innovation by presenting opportunities to design, implement, and deliver meaningful projects using mobile computing devices. Students will collaborate with one another, their instructor, and various electronic communities to solve problems presented throughout the course. Through data analysis, students will identify task requirements, plan search strategies, and use software development concepts to access, analyze, and evaluate information needed to program mobile devices. By using software design knowledge and skills that support the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. Students will learn digital citizenship by researching current laws and regulations and by practicing integrity and respect. Students will gain an understanding of the principles of mobile application development through the study of development platforms, programming languages, and software design standards. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical

thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student develops products and generates new understanding by extending existing knowledge. The student is expected to:

(A) create effective user interfaces appropriate for a specified mobile device that is best suited for an identified purpose;

(B) create effective user interfaces for browser-based, native, and hybrid mobile applications;

(C) create mobile application components appropriate for identified needs;

(D) create browser-based applications for mobile devices;

(E) create native applications that can reside on specified mobile devices; and

(F) create mobile applications that combine native and hybrid components.

(2) Communication and collaboration. The student communicates and collaborates with peers to contribute to his or her own learning and the learning of others. The student is expected to:

(A) demonstrate an understanding of and discuss how teams function;

(B) use teamwork to solve problems;

(C) describe the development workflow of mobile applications;

(D) use time-management techniques to develop and maintain work schedules, meet deadlines, and establish mobile application project criteria;

(E) describe a problem solution; and

(F) document and share problem solutions through various media.

(3) Research and information fluency. The student locates, analyzes, processes, and organizes data. The student is expected to:

(A) analyze, identify, and describe mobile application project stakeholders and their perspectives;

(B) collect and analyze available data to identify mobile application project requirements;

(C) analyze, identify, and describe input, output, and processing requirements; and

(D) analyze, identify, and define hardware and software specifications.

(4) Critical thinking, problem solving, and decision making. The student uses appropriate strategies to analyze problems and design algorithms. The student is expected to:

(A) compare and contrast design decisions based on the hardware considerations of a mobile device;

(B) compare and contrast available mobile technologies, including platforms and their operating systems;

(C) compare and contrast available development approaches, including application to specific technologies and platforms;

(D) determine the most appropriate solution for the development of a given mobile application, including browser-based, native, and hybrid approaches;

(E) compare and contrast available programming languages and how their use might be applied to specific technologies and platforms;

(F) identify and justify the selection of an appropriate programming language, including available resources and required interfaces;

(G) select an appropriate program development environment;

(H) identify and use available libraries;

(I) evaluate and justify the selection of appropriate options and components;

(J) compare and contrast available networks and their implications for mobile application development; and

(K) compare and contrast design strategies related to mobile network and device security.

(5) Digital citizenship. The student explores and understands safety, legal, cultural, and societal issues relating to the use of technology and information. The student is expected to:

(A) discuss copyright laws and issues;

(B) model ethical acquisition and use of digital information;

(C) cite sources using established methods;

(D) demonstrate proper digital etiquette and knowledge of acceptable use policies;

(E) investigate mobile device security measures such as passwords, virus detection, and virus prevention;

(F) describe potential risks and benefits associated with the use of a mobile application;

(G) identify current and emerging technologies related to mobile applications; and

(H) evaluate technologies and assess their applicability to current mobile applications.

(6) Technology operations and concepts. The student understands technology concepts, systems, and operations as they apply to computer science. The student is expected to:

(A) demonstrate an understanding of the difference between desktop and mobile applications;

(B) demonstrate an understanding of hardware and software structures and requirements in the design of mobile applications;

(C) recognize multiple platforms and demonstrate an understanding of their associated requirements;

(D) recognize various program development environments;

(E) demonstrate an understanding of eventâ€based programming and its appropriate use;

(F) describe how memory management affects mobile application design;

(G) demonstrate an understanding of how low bandwidth and the mobility of a device affect the design of mobile applications;

(H) identify applications that are best suited for mobile devices;

(I) demonstrate an understanding of the use of libraries when designing mobile applications;

(J) use a simulation tool to emulate a mobile device's functionality; and

(K) use actual mobile devices to test mobile applications.

§127.720. Independent Study in Technology Applications (One Credit), Beginning with School Year 2012-2013.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2012-2013 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: a minimum of one credit from the courses in the Information Technology Career Cluster. This course may be taken at Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Independent Study in Technology Applications, through the study of technology applications foundations, including technology-related terms, concepts, and data input strategies, students will communicate information in different formats and to diverse audiences using a variety of technologies. Students will learn to make informed decisions; develop and produce original work that exemplifies the standards identified by the selected profession or discipline; and publish the product in electronic media and print. Students will practice the efficient acquisition of information by identifying task requirements, using search strategies, and using technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) apply existing knowledge to promote creativity in designing new technology products or services;

(B) design and implement procedures to track trends, set timelines, and review and evaluate progress for continual improvement in process and product;

(C) produce electronic documentation to illustrate the progress of a project;

(D) seek and respond to input from peers and professionals in delineating technological tasks and problem solving;

(E) make necessary revisions and/or proceed to the next stage of study;

(F) use technology terminology appropriate to the independent study course;

(G) develop and apply advanced creativity and innovation employed in technology applications skills;

(H) identify and solve problems, individually and with input from peers and professionals, using research methods and advanced creativity and innovation skills used in a selected profession or discipline;

(I) develop products that meet standards identified by the selected profession or discipline; and

(J) produce original work to solve an identified problem and publish a product in electronic media and print.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) format developed projects according to defined output specifications, including target audience and viewing environment;

(B) present findings to a panel for comment and professional response;

(C) determine and implement the best method of presenting or publishing findings;

(D) synthesize and publish information in a variety of print or digital formats;

(E) use evolving network and Internet resources and appropriate technology skills to create, exchange, and publish information;

(F) develop cultural understanding and global awareness by interacting with learners of other cultures through evolving digital formats and communication methods;

(G) collaborate with others to identify a problem to be solved, hypotheses, and strategies to accomplish a task;

(H) participate with electronic communities as a learner, initiator, contributor, and facilitator/mentor; and

(I) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student is expected to:

(A) use evolving network and Internet resources for research and resource sharing of technology applications;

(B) apply appropriate search strategies in the acquisition of information from the Internet, including keyword and Boolean search strategies;

(C) pose hypotheses and questions related to a selected problem;

(D) acquire information using appropriate research strategies with source citations through electronic formats, including interactive components, text, audio, video, graphics, and simulations; and

(E) identify, create, and use available file formats, including text, image, video, and audio files.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) evaluate the design, functionality, and accuracy of the accessed information;

(B) conduct systematic research;

(C) demonstrate creative-thinking and problem-solving skills;

(D) integrate appropriate productivity tools, including network, mobile access, and multimedia tools, in the creation of solutions to problems;

(E) use enriched curricular content in the creation of products;

(F) synthesize and generate new information from data gathered from electronic resources;

(G) read and use technical documentation; and

(H) write simple technical documentation relative to the audience.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) discuss intellectual property, privacy, sharing of information, copyright laws, and software licensing agreements;

(B) model ethical acquisition and use of digital information;

(C) model respect of intellectual property when editing graphics, video, text, and sound files;

(D) demonstrate proper etiquette, responsible use of software, and knowledge of acceptable use policies when using network resources;

(E) demonstrate best practices in understanding and applying information security;

(F) develop and maintain a technical documentation library in a variety of formats; and

(G) investigate how technology has changed and the social and ethical ramifications of computer usage.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge and appropriate use of input devices, operating systems, software applications, and communication and networking components;

(B) select, acquire, and use appropriate digital tools;

(C) delineate and make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity; and

(D) use appropriate technology terminology and naming conventions.

§127.721. Independent Study in Evolving/Emerging Technologies (One Credit).

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: a minimum of one credit from the courses in the Information Technology Career Cluster. This course may be taken at Grades 9-12.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In the Independent Study in Evolving/Emerging Technologies course, through the study of evolving/emerging technologies, including technology-related terms, concepts, and data input strategies, students will communicate information in different formats and to diverse audiences using a variety of technologies. Students will learn to make informed decisions, develop and produce original work that exemplifies the standards identified by the selected profession or discipline, and publish the product in electronic media and print. Students will demonstrate efficient acquisition of information by identifying task requirements, using search strategies, and using technology to access, analyze, and evaluate the acquired information. By using technology as a tool that supports the work of individuals and groups in solving

problems, students will select the technology appropriate for the task, synthesize knowledge, create solutions, and evaluate the results. The six strands include creativity and innovation; communication and collaboration; research and information fluency; critical thinking; problem solving, and decision making; digital citizenship; and technology operations and concepts.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) Creativity and innovation. The student demonstrates creative thinking, constructs knowledge, and develops innovative products and processes using technology. The student is expected to:

(A) apply existing knowledge to promote creativity in designing new technology products or services;

(B) design and implement procedures to track trends, set timelines, and review and evaluate progress for continual improvement in process and product;

(C) produce electronic documentation to illustrate the progress of a project;

(D) seek and respond to input from peers and professionals in delineating technological tasks and problem solving;

(E) make necessary revisions and/or proceed to the next stage of study;

(F) use technology terminology appropriate to the independent study course;

(G) develop and apply advanced creativity and innovation employed in technology applications skills;

(H) identify and solve problems, individually and with input from peers and professionals, using research methods and advanced creativity and innovation skills used in a selected profession or discipline;

(I) develop products that meet standards identified by a selected profession or discipline; and

(J) produce original work to solve an identified problem and publish a product in electronic media and print.

(2) Communication and collaboration. The student uses digital media and environments to communicate and work collaboratively, including at a distance, to support individual learning and contribute to the learning experience of others. The student is expected to:

(A) format developed projects according to defined output specifications, including target audience and viewing environment;

(B) present findings to a panel for comment and professional response;

(C) determine and implement the best method of presenting or publishing findings;

(D) synthesize and publish information in a variety of print or digital formats;

(E) use evolving network resources and appropriate technology skills to create, exchange, and publish information;

(F) develop cultural understanding and global awareness by interacting with learners of other cultures through evolving digital formats and communication methods;

(G) collaborate with others to identify a problem to be solved, hypotheses, and strategies to accomplish a task;

(H) participate with electronic communities as a learner, initiator, contributor, and facilitator/mentor; and

(I) participate in relevant, meaningful activities in the larger community and society to create electronic projects.

(3) Research and information fluency. The student applies digital tools to gather, evaluate, and use information. The student uses a variety of strategies to acquire information from electronic resources, with appropriate supervision. The student is expected to:

(A) use evolving network and Internet resources for research and resource sharing of technology applications;

(B) apply appropriate search strategies in the acquisition of information from the Internet, including keyword and Boolean search strategies;

(C) pose hypotheses and questions related to a selected problem;

(D) acquire information using appropriate research strategies with source citations through electronic formats, including interactive components, text, audio, video, graphics, and simulations; and

(E) identify, create, and use available file formats, including text, image, video, and audio files.

(4) Critical thinking, problem solving, and decision making. The student uses critical-thinking skills to plan and conduct research, manage projects, solve problems, and make informed decisions using appropriate digital tools and resources. The student is expected to:

(A) evaluate the design, functionality, and accuracy of the accessed information;

(B) conduct systematic research;

(C) demonstrate creative-thinking and problem-solving skills;

(D) integrate appropriate productivity tools, including network, mobile access, and multimedia tools, in the creation of solutions to problems;

(E) use enriched curricular content in the creation of products;

(F) synthesize and generate new information from data gathered from electronic resources;

(G) read and use technical documentation; and

(H) write simple technical documentation relative to the audience.

(5) Digital citizenship. The student understands human, cultural, and societal issues related to technology and practices legal and ethical behavior. The student is expected to:

(A) discuss intellectual property, privacy, sharing of information, copyright laws, and software licensing agreements;

(B) model ethical acquisition and use of digital information;

(C) model respect of intellectual property when editing graphics, video, text, and sound files;

(D) demonstrate proper etiquette, responsible use of software, and knowledge of acceptable use policies when using network resources;

(E) demonstrate best practices in understanding and applying information security;

(F) develop and maintain a technical documentation library in a variety of formats; and

(G) investigate how technology has changed and the social and ethical ramifications of computer usage.

(6) Technology operations and concepts. The student demonstrates a sound understanding of technology concepts, systems, and operations. The student is expected to:

(A) demonstrate knowledge and appropriate use of input devices, operating systems, software applications, and communication and networking components;

(B) select, acquire, and use appropriate digital tools;

(C) delineate and make necessary adjustments regarding compatibility issues, including digital file formats and cross-platform connectivity; and

(D) use appropriate technology terminology and naming conventions.

§127.722. Advanced Placement (AP) Computer Science A (Two Credits).

(a) General requirements. This course is in a career and technical education (CTE) program of study. Students shall be awarded two credits for successful completion of this course. Recommended prerequisites: Algebra I or a student should be comfortable with functions and the concepts found in the uses of functional notation such as $f(x) = x + 2$ and $f(x) = g(h(x))$.

(b) Content requirements. Content requirements for Advanced Placement (AP) Computer Science A are prescribed in the College Board Publication Advanced Placement Course Description: Computer Science A, published by The College Board.

§127.723. Advanced Placement (AP) Computer Science Principles (One Credit).

(a) General requirements. This course is in a career and technical education (CTE) program of study. Students shall be awarded one credit for successful completion of this course. Recommended prerequisite: Algebra I.

(b) Content requirements. Content requirements for Advanced Placement (AP) Computer Science Principles are prescribed in the College Board Publication Advanced PlacementÂ® Curriculum Framework: AP Computer Science Principles, published by The College Board.

§127.724. International Baccalaureate (IB) Computer Science Standard Level (Two Credits)

(a) General requirements. This course is in a career and technical education (CTE) program of study. Students shall be awarded two credits for successful completion of this course. Recommended prerequisites: Computer Science I, Algebra II.

(b) Content requirements. Content requirements for IB Computer Science Standard Level are prescribed by the International Baccalaureate Organization. Subject guides may be obtained from International Baccalaureate of North America.

§127.725. International Baccalaureate (IB) Computer Science Higher Level (Two Credits).

(a) General requirements. This course is in a career and technical education (CTE) program of study. Students shall be awarded two credits for successful completion of this course. Recommended prerequisites: Computer Science I, Algebra II.

(b) Content requirements. Content requirements for IB Computer Science Higher Level are prescribed by the International Baccalaureate Organization. Subject guides may be obtained from International Baccalaureate of North America.

§127.735. Practicum in Information Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisite: a minimum of two high school information technology (IT) courses. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In the Practicum in Information Technology, students will gain advanced knowledge and skills in the application, design, production, implementation, maintenance, evaluation, and assessment of products, services, and systems. Knowledge and skills in the proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an industry mentor, as an unpaid or paid internship, as part of a capstone project, or as career preparation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) improve on a personal career plan along with education, job skills, and experience necessary to achieve career goals;

(B) develop a resume that includes letters of recommendation and a portfolio appropriate to a chosen career plan; and

(C) illustrate interview skills for successful job placement.

(2) The student applies academic knowledge and skills to research and develop projects. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques consistent with IT industry standards;

(B) demonstrate proper use of mathematics concepts in the development of products or services; and

(C) demonstrate proper use of science principles in the development of products or services.

(3) The student selects an approach for conducting research to discover a problem in the field of IT with the appropriate supervision and guidance. The student is expected to:

(A) identify a problem relating to information technology; and

(B) describe and use an approach such as top-down or bottom-up for conducting a research activity.

(4) The student creates a technological solution for a problem in the field of IT. The student is expected to:

(A) apply critical-thinking strategies to develop a solution using appropriate technologies and resources, IT concepts, and industry standards;

(B) apply decision-making techniques to the selection of technological solutions; and

(C) explain how the proposed technological solution will resolve the problem.

(5) The student designs, creates, and implements a product or service that addresses a problem in the field of IT and incorporates the solution. The student is expected to:

(A) work closely with a mentor throughout the design, creation, and implementation process;

(B) develop a product or service that meets a specified need following a problem-solving strategy;

(C) identify areas where quality, reliability, and safety can be designed into a product or service;

(D) develop and implement a security management plan to address security requirements;

(E) develop a sustainability plan for the product or service;

(F) develop an evaluation method for analyzing the effect of the product or service on client satisfaction and problem resolution;

(G) develop a project portfolio that documents the research and development process; and

(H) present the portfolio to a panel of professionals using formal presentation skills.

(6) The student creates a personal portfolio. The student is expected to:

(A) create a portfolio that documents all projects and accomplishments such as academics, volunteer experience, employment experience, awards, and certifications;

(B) organize and prioritize information within the portfolio; and

(C) use written, verbal, and visual communication techniques consistent with IT industry standards.

§127.736. Extended Practicum in Information Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Information Technology Career Cluster. Prerequisite: a minimum of two high school information technology courses. Corequisite: Practicum in Information Technology. This course must be taken concurrently with Practicum in Information Technology and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In Extended Practicum in Information Technology, students will gain advanced knowledge and skills in the application, design, production, implementation, maintenance, evaluation, and assessment of products, services, and systems. Knowledge and skills in the proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an instructor, with an industry mentor, or both.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques consistent with IT industry standards with increased proficiency;

(B) apply active listening skills to obtain and clarify information;

(C) create and deliver formal and informal presentations in an effective manner; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) apply critical-thinking strategies with increased fluency to develop solutions using appropriate technologies and resources, IT concepts, and industry standards; and

(C) apply decision-making techniques with increased fluency to choose a technology-based solution.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow IT security rules, regulations, and procedures; and

(B) develop and implement security management plans to address security requirements.

(4) The student understands the professional, ethical, and legal responsibilities in IT. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) describe and practice ethical and legal responsibilities associated with the field of IT;

(C) show integrity by choosing the ethical course of action when making decisions; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised IT experience. The student is expected to:

(A) design, create, and implement a product or service that addresses a problem or meets a specified need in the field of IT;

(B) identify areas where quality, reliability, and safety can be designed into a product or service;

(C) develop a sustainability plan for the product or service;

(D) develop an evaluation method to analyze the effect of the product or service on client satisfaction and problem resolution; and

(E) collect representative work samples.

§127.737. Computer Technician Practicum (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Information Technology, Computer Maintenance, Computer Maintenance Lab, Networking, and Networking Lab. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In the Computer Technician Practicum, students will gain knowledge and skills in the area of computer technologies, including advanced knowledge of electrical and electronic theory, computer principles, and components related to the installation, diagnosis, service, and repair of computer-based technology systems. Students will reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an instructor, with an industry mentor, or both.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies various employment opportunities in the IT field. The student is expected to:

(A) improve on a personal career plan along with education, job skills, and experience necessary to achieve career goals;

(B) develop a resume appropriate to a chosen career plan, including letters of recommendation; and

(C) illustrate interview skills for successful job placement.

(2) The student relates core academic skills to the requirements of computer technologies. The student is expected to:

(A) demonstrate effective verbal and written communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) complete work orders and related paperwork for repair and installation;

(C) estimate supplies, materials, and labor costs for installation, maintenance, and repair work orders; and

(D) read and interpret technical documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins.

(3) The student applies communication, mathematics, English, and science knowledge and skills to research and develop projects. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques consistent with IT industry standards;

(B) demonstrate proper use of mathematics concepts in the development of products or services; and

(C) demonstrate proper use of science principles to the development of products or services.

(4) The student knows the concepts and skills that form the basis of computer technologies. The student is expected to:

(A) explain microprocessor theory;

(B) define the use of Boolean logic in computer technologies;

(C) describe the theories of magnetism, electricity, and electronics as they apply to computer systems;

(D) identify proper troubleshooting techniques;

(E) differentiate among digital and analog input and output electronics theories;

(F) describe the architecture of various computer systems;

(G) describe the function of central processing units, storage devices, peripheral devices, and microprocessor units; and

(H) explain computer system environmental requirements and related control devices.

(5) The student knows the proper function and application of the tools, equipment, technologies, and materials used in computer technologies. The student is expected to:

(A) demonstrate safe use of equipment in computer technologies such as hand and power tools;

(B) employ available reference tools, materials, and Internet sources to access information as needed;

(C) demonstrate the proper handling and disposal of environmentally hazardous materials used in computer technologies; and

(D) identify new and emerging technologies that may affect the field of computer technology such as quantum computing, photonics, and nanotechnology.

(6) The student applies the essential knowledge and skills for computer technologies to career preparation, job shadowing, mentoring, or apprenticeship training in simulated and actual work situations. The student is expected to:

(A) identify a problem relating to information technology;

(B) develop a solution using appropriate technologies, IT concepts, and IT industry standards;

(C) explain how the proposed technological solution will resolve the problem and the methodologies involved;

(D) apply decision-making techniques to the selection of technological solutions;

(E) identify areas where quality, reliability, and safety can be designed into a product or service;

(F) apply critical-thinking strategies to analyze and evaluate the proposed technological solution;

(G) develop a sustainability plan for the product or service;

(H) select and use the appropriate technological resources to conduct, research, design, and develop activities;

(I) develop the documentation of the research and development process; and

(J) present the solution to a panel of professionals using formal presentation skills.

(7) The student employs project management knowledge to oversee IT projects. The student is expected to:

(A) implement project methodologies, including initiating, planning, executing, monitoring and controlling, and closing a project, to manage information system projects;

(B) define the scope of work to achieve individual and group goals;

(C) develop time and activity plans to achieve objectives;

(D) implement or participate with cross-functional teams to achieve IT project goals;

(E) develop and implement quality assurance test plans; and

(F) create a contingency plan.

(8) The student recognizes and analyzes potential IT security threats to develop and maintain security requirements. The student is expected to:

(A) describe potential security threats to information systems;

(B) identify the range of security needs and the problems that can occur due to security lapses;

(C) develop and implement plans to address security threats;

(D) document security procedures; and

(E) describe the use of computer forensics in countering security threats such as IT crimes and security breaches.

(9) The student provides support to computer users to maintain service. The student is expected to:

(A) employ effective listening skills when working with clients to identify support needs;

(B) identify customer need and formulate a support plan;

(C) create queries and reports and assess critical system information;

(D) employ problem-solving skills in performing support, maintenance, and repair;

(E) use hardware and software diagnostics;

(F) report to the user the cause of and solution to the problem; and

(G) create written documentation indicating the cause of and solution to the problem.

(10) The student demonstrates and applies knowledge of security risks and safeguards. The student is expected to:

(A) install security software;

(B) update security software; and

(C) use security software to clean an infected machine.

(11) The student provides support to computer users to maintain service. The student is expected to:

(A) develop a written disaster recovery plan; and

(B) develop a written preventive maintenance plan.

(12) The student creates a personal portfolio. The student is expected to:

(A) create a portfolio that documents all projects and accomplishments such as academics, volunteer experience, employment experience, awards, and certifications;

(B) organize and prioritize information within the portfolio; and

(C) use written, verbal, and visual communication techniques consistent with IT industry standards.

§127.738. Extended Computer Technician Practicum (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Information Technology Career Cluster. Recommended prerequisites: Principles of Information Technology, Computer Maintenance, Computer Maintenance Lab, Networking, and Networking Lab. Corequisite: Computer Technician Practicum. This course must be taken concurrently with Computer Technician Practicum and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Information Technology (IT) Career Cluster focuses on building linkages in IT occupations for entry level, technical, and professional careers related to the design, development, support, and management of hardware, software, multimedia, and systems integration services.

(3) In the Extended Computer Technician Practicum, students will gain knowledge and skills in the area of computer technologies, including advanced knowledge of electrical and electronic theory, computer principles, and components related to the installation, diagnosis, service, and repair of computer-based technology systems. Students will reinforce, apply, and transfer their knowledge and skills to a variety of settings and problems. Proper use of analytical skills and application of IT concepts and standards are essential to prepare students for success in a technology-driven society. Critical thinking, IT experience, and product development may be conducted in a classroom setting with an instructor, with an industry mentor, or both.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies professional communications strategies. The student is expected to:

(A) demonstrate proper use of written, verbal, and visual communication techniques consistent with IT industry standards with increased proficiency;

(B) analyze, interpret, and effectively communicate information;

(C) apply active listening skills to obtain and clarify information; and

(D) exhibit public relations skills to maintain internal and external customer/client satisfaction.

(2) The student implements advanced problem-solving methods. The student is expected to employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions.

(3) The student understands and applies proper safety and security techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow IT security rules, regulations, and procedures;

(B) recognize and analyze potential IT security threats and address security by installing and updating security software and using security software to clean an infected machine;

(C) identify the range of security needs and the problems that can occur due to security lapses with increased proficiency;

(D) demonstrate safe use of computer technology equipment such as hand and power tools with increased proficiency; and

(E) demonstrate the proper handling and disposal of environmentally hazardous materials used in computer technologies in a consistent manner.

(4) The student understands the professional, ethical, and legal responsibilities in IT. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) describe and practice ethical and legal responsibilities associated with the field of IT;

(C) show integrity by choosing the ethical course of action when making decisions; and

(D) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised IT experience. The student is expected to:

(A) select and use the appropriate technological resources to conduct, document, and evaluate learning activities in a supervised IT experience;

(B) read and interpret technical documentation such as schematics, drawings, charts, diagrams, technical manuals, and bulletins with increased fluency;

(C) employ available reference tools, materials, and Internet sources with increased fluency to access information as needed;

(D) develop solutions using appropriate technologies, IT concepts, and IT industry standards with increased proficiency;

(E) implement project methodologies to manage information system projects; and

(F) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

SUBCHAPTER N. LAW AND PUBLIC SERVICE

19 TAC §§127.746 - 127.751, 127.758 - 127.769, 127.800 - 127.803

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.746. Principles of Law, Public Safety, Corrections, and Security (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Principles of Law, Public Safety, Corrections, and Security introduces students to professions in law enforcement, protective services, corrections, firefighting, and emergency management services. Students will examine the roles and responsibilities of police, courts, corrections, private security, and protective agencies of fire and emergency services. The course provides students with an overview of the skills necessary for careers in law enforcement, fire service, protective services, and corrections.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student achieves academic knowledge and skills required for career and postsecondary education opportunities associated with the career field. The student is expected to:

(A) apply English language arts knowledge and skills required for career and postsecondary education opportunities;

(B) apply mathematics knowledge and skills required for career and postsecondary education opportunities; and

(C) apply science knowledge and skills for career and postsecondary education associated with the career field.

(2) The student uses communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) evaluate effective use of grammar to develop verbal communication skills;

(B) differentiate among speaking strategies used to communicate specific ideas to various audiences;

(C) interpret voice quality and delivery to analyze verbal communication; and

(D) demonstrate effective interpersonal skills necessary to communicate with coworkers and the public.

(3) The student formulates ideas, proposals, and solutions to address problems related to the career field in order to ensure effective and efficient delivery of services. The student is expected to:

(A) use analytical skills to formulate ideas, proposals, and solutions to problems;

(B) formulate ideas, proposals, and solutions to ensure delivery of services; and

(C) use critical-thinking skills to solve ethical issues identified in the career field.

(4) The student implements measures to maintain safe and healthful working conditions in a law and public safety environment. The student is expected to:

(A) identify, analyze, and evaluate the dangers associated with the different career fields;

(B) create and recommend strategies for issues related to the safety and health of employees based on an assessment of a simulated workplace environment;

(C) discuss methods for safe handling of hazardous materials;

(D) discuss the importance of good health and physical fitness; and

(E) demonstrate first aid, cardiopulmonary resuscitation, and automated external defibrillator procedures.

(5) The student analyzes the legal responsibilities associated with roles and functions within law, public safety, corrections, and security organizations to demonstrate a commitment to professional and ethical behavior. The student is expected to:

(A) examine real-world situations involving ethical dilemmas and professional conduct;

(B) explain laws, regulations, and policies that govern professionals; and

(C) recommend a strategy for responding to an unethical or illegal situation.

(6) The student recognizes the importance of interagency cooperation. The student is expected to:

(A) discuss the importance of police, fire, emergency medical services, court, corrections, and security systems working together to protect the public;

(B) examine the roles and responsibilities of first responders;

(C) identify jurisdictional problems that may arise as multiple agencies work together; and

(D) differentiate the roles of private security and public law enforcement agencies.

(7) The student understands the historical and philosophical development of criminal law. The student is expected to:

(A) identify the sources and origin of law in the United States;

(B) explain the impact of the U.S. Constitution and Bill of Rights on criminal law in regard to the rights of citizens;

(C) differentiate between crimes classified as felonies or misdemeanors and the punishments for each;

(D) analyze the essential elements and classifications of a crime;

(E) identify problems commonly associated with the enforcement of criminal laws; and

(F) identify the process by which laws are enacted.

(8) The student identifies the roles of the public safety professional. The student is expected to:

(A) identify career opportunities in federal, state, county, and municipal law enforcement agencies;

(B) identify the education and training required for various levels of law enforcement;

(C) discuss the history of policing in the United States;

(D) identify the roles and responsibilities of law enforcement professionals;

(E) analyze the impact of constitutional law on police as it relates to arrest, use of force, searches, and seizure;

(F) examine the role of emergency medical services in public safety; and

(G) identify how public safety professionals manage the stress related to these jobs.

(9) The student identifies the roles and functions of court systems. The student is expected to:

(A) identify career opportunities in the court systems;

(B) identify the levels and functions of criminal courts;

(C) examine the roles of the courtroom work groups such as judges, prosecutors, defense counsel, and bailiffs;

(D) explain pretrial and courtroom procedures; and

(E) identify types of sentencing and sentencing rules.

(10) The student identifies the roles and functions of the correctional system. The student is expected to:

(A) explain career opportunities available in the correctional system, including probation and parole;

(B) explain the duties and responsibilities of correctional officers;

(C) recognize the history of prisons in the United States;

(D) explain the differences between jails and prisons;

(E) identify the levels of security in prisons and jails; and

(F) explain the constitutional rights of inmates in prisons and jails.

(11) The student identifies the roles and functions of private security systems and agencies. The student is expected to:

(A) explain the career opportunities available in private security;

(B) discuss the history and importance of private security in the United States; and

(C) examine the relationship between private security and public safety agencies.

(12) The student identifies the roles and functions of fire protection services. The student is expected to:

(A) identify the career opportunities in fire protection services;

(B) explain the duties and responsibilities of firefighters;

(C) recognize the importance of the operation of 911 and computer-aided dispatch systems; and

(D) explain the relationships among police, fire, and emergency medical services.

(13) The student identifies the roles and functions of student community organizations that support or provide additional information and guidance to those interested in law, public safety, corrections, and protective services. The student is expected to:

(A) research and participate in community organizations such as SkillsUSA, Law Enforcement Explorer Scouts, and National Technical Honor Society; and

(B) identify community outreach organizations such as Citizens on Patrol; local student police organizations; or national student police organizations.

§127.747. Correctional Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) In Correctional Services, students prepare for certification required for employment as a municipal, county, state, or federal correctional officer. Students will learn the role and responsibilities of a county or municipal correctional officer; discuss relevant rules, regulations, and laws of municipal, county, state, or federal facilities; and discuss defensive tactics, restraint techniques, and first aid procedures as used in the municipal, county, state, or federal correctional setting. Students will analyze rehabilitation and alternatives to institutionalization for inmates.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches the history of correctional services in the municipal, county, state, or federal setting. The student is expected to:

(A) examine the history of corrections such as municipal, county, state, and federal;

(B) examine the rules of conduct and disciplinary action guidelines for employees of municipal, county, state, or federal correctional facilities;

(C) analyze personal responsibilities, including preferences, to determine requirements for employment in municipal, county, state, or federal correctional services; and

(D) effectively search methods to locate potential employment opportunities in municipal, county, state, or federal correctional services.

(2) The student recognizes professional standards and ethical responsibilities in the municipal, county, state, or federal correctional facilities. The student is expected to:

(A) identify employer expectations such as effective verbal communication skills; professional conduct; knowledge of laws, regulations, and policies; punctuality and attendance; initiative; cooperation; time management; and sensitivity to and value for diversity;

(B) identify professional standards in municipal, county, state, or federal correctional facilities such as dress, grooming, and personal protective equipment as appropriate; and leadership and teamwork when collaborating with others to accomplish goals and objectives; and

(C) analyze the ethical responsibilities of correctional officers to ensure protections of rights.

(3) The student uses verbal communication skills necessary for municipal, county, state, or federal correctional officers. The student is expected to:

(A) define technical concepts and vocabulary associated with municipal, county, state, or federal correctional services through effective verbal communication; and

(B) contribute to group discussions and meetings by demonstrating active listening and effective speaking skills.

(4) The student performs active listening skills to obtain and clarify information. The student is expected to:

(A) apply listening skills to obtain and clarify information provided in verbal communication; and

(B) demonstrate communication skills to explain the meaning of technical vocabulary concepts related to correctional services.

(5) The student uses first aid, infection control, and cardiopulmonary resuscitation in a correctional facility. The student is expected to:

(A) demonstrate first aid procedures, cardiopulmonary resuscitation, and automated external defibrillator use in a simulated emergency situation;

(B) comply with standard precautions as they relate to infection control; and

(C) use special requirements for handling hazardous materials to maintain a safe working environment.

(6) The student recognizes constitutional laws and laws of correctional systems. The student is expected to:

(A) apply constitutional laws, including laws of arrest, to execute official correctional service duties while respecting citizen rights;

(B) explore the impact of the U.S. legal system on the correctional system;

(C) differentiate between the civil and criminal justice systems and explain how change impacts correctional services;

(D) use the appropriate techniques to manage crisis situations to protect individuals and society;

(E) execute protocols associated with arrest, search, and seizure using the statutes set forth by the Fourth Amendment;

(F) summarize the rights of an individual being interrogated under the Fifth Amendment;

(G) examine trial, jury, and due process rights; and

(H) state the conditions under which citizens and noncitizens of the United States may be interrogated in the correctional environment.

(7) The student models behaviors during interactions with prisoners that demonstrate concern for individuals with disabilities. The student is expected to:

(A) apply the appropriate procedures for use with individuals who have mental disorders, physical disabilities, communication disorders, and atypical behaviors;

(B) execute protocols to provide appropriate assistance to people with disabilities and impairments; and

(C) analyze the impact of the Americans with Disabilities Act on inmates and correctional staff.

(8) The student uses conflict resolution skills and knowledge to resolve conflicts among individuals in correctional environments. The student is expected to:

(A) examine the origins of conflict and the needs that motivate behavior;

(B) analyze different responses to conflict and the results generated;

(C) use principle-centered conflict resolution processes in order to resolve conflicts; and

(D) interpret visual and vocal cues to comprehend information received such as from body language, eye movement, voice tone, and voice inflection.

(9) The student analyzes hostile situations and executes conflict management strategies to take charge of problems that arise in correctional settings. The student is expected to:

(A) review security post procedures in a correctional facility;

(B) explain the importance of a perimeter security system;

(C) appraise situations and select the appropriate degree of force;

(D) complete steps involved in pre-event planning to respond to crisis situations; and

(E) perform appropriate crisis management to protect individual and societal rights.

(10) The student applies technical skill procedures of correctional staff to effectively manage day-to-day operations of correctional facilities. The student is expected to:

(A) demonstrate knowledge of policies and procedures for inmate supervision and discipline;

(B) demonstrate protocol designed to restrain individuals placed into custody without violating personal rights or jeopardizing personal safety;

(C) develop emergency plans and procedures for correctional facilities;

(D) describe the process for providing food services and the critical elements to ensure an effective operation;

(E) describe the steps for processing inmates such as reception, orientation, and classification;

(F) conduct a simulated parole interview;

(G) analyze prisoner re-entry programs and the effect of the programs on the community; and

(H) describe the importance of public relations as related to communities and citizens.

(11) The student identifies basic organizational models for municipal, county, state, or federal correctional facilities and the officer's role in maintaining order and safety. The student is expected to:

(A) identify three primary models of detention facilities;

(B) identify the role and core responsibilities of the officer in the detention facility; and

(C) recognize issues involving prisoners' constitutional rights.

(12) The student recognizes issues related to human behavior and relations in a detention facility. The student is expected to:

(A) identify the importance of ethical judgment and behavior in the criminal justice system;

(B) recognize issues involved with human relations between staff and prisoners;

(C) compare and contrast stress and stress-related issues for correctional personnel;

(D) evaluate the process of promoting cultural awareness at a municipal, county, state, or federal facility; and

(E) identify state and federal laws related to civil rights, sexual harassment, and liability issues for detention personnel.

(13) The student identifies methods of screening for and addressing injurious prisoner behavior. The student is expected to:

(A) identify various methods of screening for suicide risks;

(B) recognize procedures for preventing suicide among prisoners and for responding to suicide attempts; and

(C) identify various methods for determining, classifying, and dealing with intoxicated prisoners in the correctional setting.

(14) The student recognizes intake procedures for a detention facility. The student is expected to:

(A) identify general booking procedures such as basic orientation procedures, fingerprinting, report writing, and documentation of prisoner information;

(B) identify steps in the prisoner admission process; and

(C) recognize the process for releasing prisoners.

(15) The student recognizes various inmate health care issues and processes. The student is expected to:

(A) identify issues and symptoms involving persons with a variety of mental impairments at a detention facility;

(B) identify questions to ask when screening prisoners for mental illness and recognize methods for interacting and communicating with prisoners who may be mentally ill;

(C) recognize processes for maintaining inmate health records and understand health risks of communicable diseases; and

(D) recognize legal aspects of health care in a detention facility.

(16) The student identifies methods of providing various prisoner services. The student is expected to identify processes for issuing prisoner supplies and recognize issues involving prisoner food service, visitations, prisoner correspondence, and telephone usage.

(17) The student recognizes prisoner and facility security protocols. The student is expected to:

(A) identify issues involving inmate counts;

(B) demonstrate procedures for inventorying prisoner's property;

(C) identify the process of searching male and female prisoners;

(D) identify the processes and procedures for searching cells and common areas within a correctional facility; and

(E) identify issues involving facility security.

(18) The student recognizes the appropriate actions to take in emergency situations at a detention facility. The student is expected to:

(A) identify procedures for responding to a riot and disturbance in a municipal, county, state, or federal correctional facility;

(B) identify procedures for responding to events such as assaults, fires, medical emergencies, prisoner escapes, and hostage situations;

(C) recognize issues in dealing with disruptive inmates and groups; and

(D) identify procedures for escape attempts and escapes.

(19) The student identifies report-writing methods and courtroom procedures. The student is expected to:

(A) identify the process involved with writing reports;

(B) identify appropriate courtroom attire and demeanor; and

(C) recognize procedures for preparing for courtroom testimony.

(20) The student evaluates situations requiring the use of force. The student is expected to:

(A) demonstrate the use of the force continuum in simulated situations requiring varied degrees of force; and

(B) explain the guidelines and restrictions imposed by state and federal governments related to the use of deadly force.

(21) The student analyzes procedures and protocols for self-defense in homeland security and protective services. The student is expected to demonstrate self-defense and defensive tactics such as ready stance and escort positions, strikes, kicks, punches, handcuffing, and searching.

§127.748. Firefighter I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Firefighter I introduces students to firefighter safety and development. Students will analyze Texas Commission on Fire Protection rules and regulations, proper incident reporting and records, proper use of personal protective equipment, and the principles of fire safety.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses communication skills as related to fire management. The student is expected to:

(A) demonstrate the use of speech and written communication platforms common to fire management services;

(B) practice steps involved in using radio communication for fire management;

(C) apply the Incident Command System to manage emergencies; and

(D) apply protocols in emergency management response when working at an accident scene.

(2) The student executes safety procedures and protocols associated with fire management services. The student is expected to:

(A) apply local, state, and federal regulations pertaining to safety issues;

(B) apply protocols for handling hazardous materials at the awareness level; and

(C) practice personal safety procedures.

(3) The student comprehends the steps to develop an institutional professional growth plan to develop team building and leadership skills common for fire management systems. The student is expected to:

(A) recognize techniques for functioning within a group environment; and

(B) demonstrate model leadership within fire management.

(4) The student applies laws, ordinances, regulations, and rules as defined by the Texas Commission on Fire Protection Certification Curriculum Manual to perform duties within a set of rules or protocols. The student is expected to:

(A) identify the correct laws and rules applicable to basic firefighter certification by the Texas Commission on Fire Protection;

(B) review the Texas Commission on Fire Protection requirements for certification as a basic firefighter as stated in the Standards Manual for Fire Protection Personnel;

(C) identify the various levels of firefighter certifications by the Texas Commission on Fire Protection as stated in the Standards Manual for Fire Protection Personnel;

(D) identify the levels of instructor certification by the Texas Commission on Fire Protection as stated in the Standards Manual for Fire Protection Personnel; and

(E) describe responsibilities of a firefighter as required by the National Fire Protection Association 1500: Standard on Fire Department Occupational Safety and Health Program.

(5) The student describes the stages of a fire, the process of combustion, and the appropriate action to be taken for extinguishment. The student is expected to:

(A) describe the four products of combustion commonly found in structural fires that create a life hazard;

(B) define terms such as fire, flash point, ignition temperature, fire point, flammable (explosive) range, boiling point, oxidation, pyrolysis, reducing agent, vaporization, combustion, vapor density, and specific gravity;

(C) describe the process of thermal layering that occurs in structural fires and how to avoid disturbing the normal layering of heat;

(D) define fire triangle and fire tetrahedron;

(E) describe heat energy sources such as chemical, electrical, mechanical, and nuclear;

(F) identify the stages of fire development;

(G) explain the special conditions that occur during a fire's growth such as flameover, rollover, flashover, thermal layering, and backdraft; and

(H) identify the units of heat measurement and how to convert units.

(6) The student describes the methods of heat transfer. The student is expected to:

(A) describe methods of heat transfer such as conduction, convection, and radiation; and

(B) describe examples of heat transfer in fire emergencies such as conduction, convection, and radiation.

(7) The student analyzes the physical states of matter in which fuels are commonly found. The student is expected to:

(A) describe the physical states of matter in which fuels are commonly found such as solid, liquid, and gaseous fuels;

(B) explain terms related to the combustion process such as specific gravity, vapor density, and the theory of surface-to-mass ratio; and

(C) identify narcotic asphyxiant gases and irritants common in smoke.

(8) The student comprehends the fire extinguishment theory. The student is expected to:

(A) describe the fire extinguishment theory; and

(B) analyze methods of extinguishment such as temperature reduction, fuel removal, oxygen exclusion, and inhibiting chemical reaction.

(9) The student describes the characteristics of water as it relates to fire extinguishing potential. The student is expected to:

(A) explain the law of thermodynamics as it relates to specific heat, latent heat, and heat flow; and

(B) compare the advantages and disadvantages of water as an extinguishing agent.

(10) The student analyzes the internal systems that sustain life in the human body and identifies the physical requirements of a self-contained breathing apparatus wearer. The student is expected to:

(A) describe the internal systems that sustain life in the human body such as the respiratory and cardiovascular systems;

(B) describe the National Fire Protection Association standards applicable to the self-contained breathing apparatus;

(C) identify the firefighter's physical requirements for wearing a self-contained breathing apparatus;

(D) identify respiratory hazards during firefighting that require the use of respiratory protection;

(E) identify the different types of self-contained breathing apparatus; and

(F) describe the safety features and function of the open circuit self-contained breathing apparatus.

(11) The student demonstrates confidence in performing firefighting skills while wearing a self-contained breathing apparatus. The student is expected to:

(A) identify the safety requirements when using the self-contained breathing apparatus;

(B) describe how to calculate the air supply duration in the cylinder;

(C) describe the safety rules when wearing the self-contained breathing apparatus;

(D) describe the uses and limitations of the self-contained breathing apparatus;

(E) demonstrate the various methods of donning and doffing the self-contained breathing apparatus while wearing protective clothing;

(F) demonstrate the replacement of an expended cylinder on a self-contained breathing apparatus assembly with a full cylinder;

(G) demonstrate rescue procedures without compromising the rescuer's respiratory protection such as rescuing a firefighter with functioning respiratory protection, a firefighter without functioning respiratory protection, or a civilian without respiratory protection;

(H) perform firefighting skills while wearing the self-contained breathing apparatus with a fully charged cylinder;

(I) demonstrate the use of the self-contained breathing apparatus to manage a restricted passage in conditions of obscured visibility; and

(J) demonstrate emergency procedures to be used in the event of failure of the self-contained breathing apparatus.

(12) The student demonstrates inspection, care, and testing procedures for the self-contained breathing apparatus. The student is expected to:

(A) document routine maintenance for the self-contained breathing apparatus; and

(B) describe the use of an air supply system for recharging an air cylinder and cylinder testing maintenance of a self-contained breathing apparatus.

(13) The student identifies the types and components of fire service protective clothing and personal protective equipment. The student is expected to:

(A) identify the various types of fire service protective clothing;

(B) identify the different components of structural firefighting protective equipment and their functions;

(C) demonstrate the correct procedures for inspection and maintenance of personal protective equipment;

(D) describe the limitations of personal protective equipment in providing protection to firefighters;

(E) explain the physical limitations of a firefighter working in a personal protective ensemble; and

(F) demonstrate the donning and doffing of personal protective equipment such as helmet with eye protection, hood, boots, gloves, protective coat and trousers, self-contained breathing apparatus, and personal alert safety system device.

(14) The student demonstrates the proper testing and operation of a personal alert safety system device. The student is expected to:

(A) explain the proper operation of a personal alert safety system; and

(B) demonstrate the proper testing of a personal alert safety system.

(15) The student recognizes all aspects of the fire department organization. The student is expected to:

(A) identify aspects of the fire department organization;

(B) explain the firefighter's role as a member of the fire department;

(C) analyze the rules and regulations common to most fire departments;

(D) identify the mission of the fire service and of the local fire department according to the authority having jurisdiction;

(E) describe the function of a standard operating system and the responsibilities of a firefighter relating to compliance with the provisions of occupational safety and health programs; and

(F) explain the components of a member assistance program.

(16) The student recognizes common types of accidents and injuries and their causes. The student is expected to:

(A) describe the elements of a personnel accountability system and the application of the system at an incident;

(B) identify potential long-term firefighter health considerations of exposure to products of combustion;

(C) identify common types of accidents or injuries such as those occurring at the emergency scene, responding to and returning from calls on fire apparatus, in personal vehicles, at the fire station, at other on-duty locations, and during training; and

(D) demonstrate techniques for action when trapped or disoriented in a fire situation or in a hostile environment.

(17) The student describes the handling of different types of accidents and hazards. The student is expected to:

(A) describe the procedures for terminating utility services to a building;

(B) explain hazards that exist and describe procedures to be used in electrical emergencies;

(C) describe the safe handling and operation of hand and power tools;

(D) describe safety procedures for fire service lighting equipment such as power supply (portable or mounted), lights, cords, and connectors; and

(E) recognize the procedures for the use of safety equipment such as seat belts, ear protection, eye protection, and other safety equipment provided for protection while riding on apparatus.

(18) The student identifies safety procedures for ensuring a safe environment. The student is expected to:

(A) identify protective equipment and describe its uses;

(B) recognize traffic and scene control devices;

(C) identify structure fire and roadway emergency scene potential hazards;

(D) describe solutions to mitigate potential hazards; and

(E) describe procedures for safe operation at emergency scenes.

§127.749. Firefighter II (Three Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Firefighter I. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded three credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Firefighter II is the second course in a series for students studying firefighter safety and development. Students will understand Texas Commission on Fire Protection rules and regulations, proper incident reporting and records, proper use of personal protective equipment, and the principles of fire safety. Students will demonstrate proper use of fire extinguishers, ground ladders, fire hoses, and water supply apparatus systems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses information technology applications as they pertain to fire management situations. The student is expected to:

(A) apply protocols for managing emergency situations using radio equipment, computer technology, and public address and warning systems; and

(B) demonstrate use of word-processing and spreadsheet software in fire management services.

(2) The student evaluates behaviors, strategies, and protocols that demonstrate an understanding of duties while responding to a variety of emergency incidents. The student is expected to:

(A) identify response procedures to emergency incidents; and

(B) apply response procedures to simulated emergency incidents.

(3) The student describes the characteristics and applications for the classes of extinguishers. The student is expected to:

(A) identify the classification of types of fires as they relate to the use of portable fire extinguishers and the materials involved in each class of fire;

(B) identify the appropriate fire extinguisher for each class of fire;

(C) identify and describe fire extinguisher characteristics and operations; and

(D) describe and demonstrate the operation of fire extinguishers using Pull Aim Squeeze Sweep (PASS).

(4) The student explains the purpose of the National Fire Protection Association standards applicable to fire service ground ladders. The student is expected to:

(A) identify the materials used in ladder construction and the features;

(B) describe and demonstrate inspection and maintenance procedures for different types of ground ladders and describe procedures for conducting an annual service test on ground ladders;

(C) identify the load capacities for ground ladders;

(D) identify and select a ladder for a given task;

(E) demonstrate raising and positioning ground ladders;

(F) describe and demonstrate securing a ladder;

(G) explain and demonstrate proper ladder climbing techniques while transporting tools and equipment or assisting a person with a simulated injury; and

(H) demonstrate the deployment of a roof ladder on a pitched roof.

(5) The student describes the purpose of the National Fire Protection Association standards applicable to fire service hoses and reviews the procedures for care, maintenance, and inspection of fire hoses, couplings, nozzles, and water valves. The student is expected to:

(A) identify and describe the use and construction of fire hoses and couplings;

(B) explain the application of each size and type of hose on a pumper as required to be carried by National Fire Protection Association 1901;

(C) demonstrate the methods of connecting fire hose couplings;

(D) demonstrate the one- and two-person methods of connecting, dismantling, and rolling various sizes of hose lines;

(E) demonstrate advancing dry hose lines and charged attack lines of different sizes;

(F) demonstrate methods of hose load finishes;

(G) describe and demonstrate extending a section of hose and replacing damaged sections of hose using proper safety equipment such as clothing for performing overhaul activities; and

(H) describe the methods of washing and drying a fire hose.

(6) The student explains requirements for the production of effective fire streams. The student is expected to:

(A) identify, define, and demonstrate characteristics of fire streams;

(B) identify the type, design, operation, required nozzle pressure, and flow of a given selection of nozzles and tips;

(C) demonstrate the proper use of nozzles, hose appliances, water valves, adapters, and tools;

(D) identify various types of nozzles and their components; and

(E) identify terms relating to the principles of fire service hydraulics.

(7) The student identifies water supply sources and methods to move water from the supply source to the fire. The student is expected to:

(A) describe the operation of fire hydrants such as fully opened fire hydrants and closed fire hydrants;

(B) identify the National Fire Protection Association hydrant color code;

(C) describe making a hydrant-to-pumper connection;

(D) explain the hazards involved when the hydrant-to-pumper connection is not properly sealed; and

(E) describe the apparatus, equipment, and appliances required to provide water at rural locations.

(8) The student explains the duties of a firefighter after a fire. The student is expected to:

(A) explain how debris is handled from fires, including house fires and chemical fires;

(B) describe the duties for gathering information that may lead to the determination of the fire cause;

(C) identify the proper procedure for restoration of the premises after a fire; and

(D) describe the duties for fire and security surveillance during and after the fire.

§127.750. Law Enforcement I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Law Enforcement I is an overview of the history, organization, and functions of local, state, and federal law enforcement. Students will understand the role of constitutional law at local, state, and federal levels; the U.S. legal system; criminal law; and law enforcement terminology and the classification and elements of crime.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the legal authorities pertaining to law enforcement officers' use of force. The student is expected to:

(A) identify key terminology relating to the use of force and explain the legal authorities and the justification for use of force;

(B) analyze the deciding factors for use of force when effecting an arrest;

(C) analyze circumstances that are high risks for officers;

(D) analyze various force options or alternatives to increase the student's awareness of various force options or alternatives available to peace officers;

(E) discuss force options available to peace officers; and

(F) examine elements that an officer must recognize and control in every encounter.

(2) The student uses verbal and nonverbal communication skills necessary for law enforcement. The student is expected to:

(A) relate the meaning of technical concepts and vocabulary associated with law enforcement;

(B) interpret facial expressions, voice quality and delivery, gestures, and body positioning as related to nonverbal communication;

(C) interpret voice quality and delivery such as combination of pitch, tone, and wording;

(D) recognize diversity in culture;

(E) employ active listening skills; and

(F) contribute to group discussions and meetings.

(3) The student demonstrates a working knowledge of the laws, methods, and techniques relative to accident investigation:

(A) produce a crash report involving two or more vehicles in an accident;

(B) apply laws associated with accident investigation;

(C) research procedures for responding to an accident scene and how to maintain control of an accident scene; and

(D) demonstrate how to maintain traffic control at an accident scene.

(4) The student understands ethical behavior standards required for law enforcement personnel. The student is expected to:

(A) explain the role of the U.S. Constitution in relation to the development and implementation of law enforcement;

(B) evaluate individual ethical behavior standards;

(C) analyze legal and ethical behavior standards protecting citizens' constitutional rights;

(D) demonstrate strategies to enhance public trust; and

(E) explain the mission of law enforcement in protecting a democratic society.

(5) The student explores the U.S. legal system and the requirements for law enforcement. The student is expected to:

(A) explain how citizens are protected by constitutional laws of local, state, and federal courts;

(B) analyze the impact of Supreme Court decisions such as Mapp v. Ohio, Terry v. Ohio, and Tennessee v. Garner;

(C) analyze the similarities, differences, and interactions between local, state, and federal court systems;

(D) illustrate the progression of a case as it moves through local, state, and federal jurisdictions; and

(E) compare the characteristics of civil and criminal court systems.

(6) The student analyzes custody and interrogation as they relate to the U.S. Supreme court decision in Miranda v. Arizona. The student is expected to:

(A) demonstrate the application of the constitutional rights, using the Miranda warning requirements for both adult and juvenile suspects;

(B) explain the additional requirements above the Miranda warnings for juvenile suspects, offenders, and witnesses; and

(C) demonstrate a non-custodial and custodial interview and interrogation.

(7) The student analyzes procedural and substantive criminal law. The student is expected to:

(A) define crime categories and respective punishments according to the Texas Penal Code;

(B) analyze the elements of criminal acts according to Texas laws, including Alcoholic Beverage Code, Family Code, Penal Code, Health and Safety Code, and Criminal Code of Procedure;

(C) differentiate mala prohibita and mala in se; and

(D) analyze types of criminal defenses.

(8) The student analyzes law related to victims and witnesses. The student is expected to:

(A) analyze the rights of victims of crimes and witnesses to crime laws such as the Victim and Witness Protection Act of 1982, the Victims of Crime Act of 1984, the Victim's Rights and Restitution Act, the Child Victims' Bill of Rights of 1990, and the Victim Rights Clarification Act of 1997;

(B) analyze the psychological, social, and economic impact of crime on the victim such as:

(i) identifying the elements of a crisis reaction, the phases of a victim's reaction to a crime, the ripple effect of crime victimization, and crisis intervention; and

(ii) identifying and discussing the potential for secondary victimization by the criminal justice system and how to avoid it; and

(C) identify statutory responsibilities relating to victims' rights such as:

(i) identifying the legal basis of law enforcement's responsibilities to victims' rights;

(ii) summarizing legal requirement for providing victims written notice; and

(iii) explaining rights granted to victims of crime.

(9) The student executes protocols and procedures protecting the rights of juvenile offenders and victims. The student is expected to:

(A) discuss juvenile law as it relates to the steps in processing status offenses of juveniles; and

(B) demonstrate the procedure for holding conferences with juveniles and parents or guardians.

(10) The student analyzes the steps in handling family violence calls involving Temporary Ex Parte Protective Orders, Protective Orders, and Magistrate's Orders for Emergency Protection and the procedures for responding to family violence. The student is expected to:

(A) understand the dynamics and legal issues of family violence and child abuse such as:

(i) explaining common characteristics of family violence offenders and describing the cycle of abuse phases;

(ii) discussing the types of abuse often occurring in family violence incidences, explaining some barriers victims face when attempting to leave an abusive relationship; and

(iii) defining terminology associated with family violence related to Texas Family Code, Title 4, for Protective Orders and Family Violence; and

(B) evaluate the recommended steps in handling family violence calls involving Temporary Ex Parte Protective Orders, protective orders, and Magistrate's Order for Emergency Protection such as:

(i) identifying the legal requirements for investigation of domestic abuse and child abuse or neglect and medical treatment and examinations for both;

(ii) designing a plan on how to handle family violence situations and procedures for conducting preliminary investigations; and

(iii) demonstrating how to provide and explain community resources and referrals to victims of family violence.

(11) The student explains laws associated with the Texas Health and Safety Code. The student is expected to:

(A) identify current commonly abused drugs in society;

(B) research the effects of substances as it applies to the Texas Health and Safety Code; and

(C) summarize the procedures for handling drugs, dangerous drugs, and controlled substances.

(12) The student summarizes the philosophy and concepts that influence the development and implementation of a community-oriented police program. The student is expected to:

(A) define community-oriented policing; and

(B) evaluate the skills needed to be a successful community-oriented police officer.

(13) The student uses field note-taking and report-writing skills to complete a police call sheet, an incident report, and a supplemental report. The student is expected to:

(A) describe the components of a police call sheet, an incident report, and a supplemental report;

(B) explain why a police call sheet, an incident report, and a supplemental report are legal documents;

(C) demonstrate obtaining the appropriate information for a police call sheet, an incident report, and a supplemental report; and

(D) write a police call sheet, an incident report, and a supplemental report using clear, concise, and legible entries.

(14) The student analyzes reasonable suspicion and probable cause for motor vehicle traffic stops. The student is expected to:

(A) apply techniques used to assess risk in vehicle stops;

(B) understand and analyze traffic laws contained in the Texas Transportation Code and their applications;

(C) execute a simulated misdemeanor traffic stop using the seven-step violator contact method;

(D) execute a simulated felony traffic stop with one and two patrol units;

(E) identify if a traffic law has been violated according to the Texas Transportation Code regarding a driving situation; and

(F) identify the regulations relating to arrest, charging procedures, notices, and promises to appear.

(15) The student employs procedures to protect, document, and process a crime scene. The student is expected to:

(A) demonstrate how to lift and preserve developed latent prints from a simulated crime scene; and

(B) demonstrate how to photograph, sketch, search, collect, document, and protect the crime scene area for further investigation.

(16) The student demonstrates and applies a working knowledge of the detection, apprehension, and arrest of an intoxicated driver. The student is expected to:

(A) explain the laws related to driving while intoxicated and related offenses; and

(B) discuss the development of "reasonable suspicion" for the intoxicated driver stop and temporary detention.

(17) The student demonstrates a working knowledge of a tactical entry into a residence and building safely. The student is expected to:

(A) describe techniques officers can use to safely approach a residence or building;

(B) explain techniques to safely enter and search a residence or building;

(C) demonstrate the correct techniques for entering a doorway and searching a room(s); and

(D) demonstrate methods for clearing buildings or residences and techniques used when suspects are found inside a building or residence.

§127.751. Law Enforcement II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Law Enforcement I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Law Enforcement II provides the knowledge and skills necessary to prepare for a career in law enforcement. Students will understand ethical and legal responsibilities, patrol procedures, first responder roles, telecommunications, emergency equipment operations, and courtroom testimony.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student achieves the academic knowledge and skills required to prepare for postsecondary education and a career in law enforcement. The student is expected to:

(A) demonstrate the use of communication skills to evaluate body language, gestures, verbal tone, and inflection;

(B) apply interpersonal communication skills;

(C) apply writing skills to facilitate effective field note taking and report writing such as police incident reports;

(D) create various scenarios that use patrol tactics to effect an arrest; and

(E) demonstrate appropriate use of law, public safety, corrections, and security terminology.

(2) The student uses telecommunications equipment. The student is expected to:

(A) support the use of telecommunication mobile and handheld radio systems and current technology;

(B) formulate simulated radio communications using phonetic alphabet and common terminology;

(C) conduct simulated radio and data communications using mobile data computers and handheld radios;

(D) evaluate safety concerns with the use of telecommunications equipment, including when in the presence of non-first responders and while operating vehicles;

(E) explain the need of prioritizing calls for service; and

(F) identify the procedures used during emergency communications incidents such as hostage incidents and active pursuits.

(3) The student presents testimony in legal proceedings in accordance with courtroom procedures. The student is expected to:

(A) explain the roles of the courtroom work group;

(B) analyze the importance of reviewing field notes, reports, and evidence prior to pre-trial meeting;

(C) apply proper explanation for the introduction of evidence for admission into a trial;

(D) analyze effective courtroom testimony;

(E) demonstrate an understanding of the importance of professionalism in demeanor and attire as a witness; and

(F) discuss the importance of a pre-trial meeting with a prosecutor.

(4) The student recognizes the importance of using interpersonal communication techniques to resolve conflicts and reduce anger. The student is expected to:

(A) examine interpersonal communication techniques used in law enforcement;

(B) distinguish between passive, passive-aggressive, aggressive, and assertive behavior;

(C) discuss strategies for dealing with difficult people; and

(D) examine factors that contribute to a person's hostility.

(5) The student examines the techniques used to manage crisis situations and maintain public safety. The student is expected to:

(A) demonstrate crisis negotiations to promote the safety of individuals and the general public;

(B) participate in a simulated scenario as a crisis negotiation team member;

(C) demonstrate effective communication techniques in a simulated crisis negotiation;

(D) examine hostage safety considerations during a simulated crisis negotiation; and

(E) differentiate between public safety and individual rights during crisis negotiation.

(6) The student understands techniques to foster public cooperation for victims in a variety of law enforcement situations. The student is expected to:

(A) demonstrate procedures for advising crime victims' legal recourse;

(B) explain step-by-step court procedures for suspects, victims, and witnesses entering the system;

(C) explain the procedures for providing appropriate assistance to individuals with disabilities such as autism, Alzheimer's disease, hearing impairment, visual impairment, and mobility impairment;

(D) define the steps involved in conducting the preliminary investigation of specialized crimes such as hate crimes, bullying, sexual harassment, and terroristic threat;

(E) analyze the elements of conducting a death notification; and

(F) interpret legal requirements of law enforcement to victims of crime.

(7) The student analyzes procedures and protocols for domestic violence. The student is expected to:

(A) recognize techniques to enforce domestic violence laws;

(B) diffuse a simulated domestic violence incident; and

(C) apply laws in making an arrest.

(8) The student explores civil law enforcement procedures for serving writs, warrants, and summons. The student is expected to:

(A) research civil law procedures such as attachment, garnishment, claim, and delivery;

(B) identify limits on use of force and entry to private property during civil process service;

(C) differentiate among domestic violence protective orders, no-contact orders, and orders to pick up children; and

(D) identify requirements for emergency mental health evaluation.

(9) The student analyzes local and state law enforcement procedures pertaining to alcohol and beverage laws. The student is expected to:

(A) explain alcohol and beverage laws and procedures controlling illegal sales and consumption;

(B) define alcoholic beverages;

(C) differentiate between legal and illegal alcohol sales; and

(D) identify circumstances under which alcoholic beverages may be legally consumed.

(10) The student explores laws and procedures to enforce violations of driving while intoxicated and driving under the influence. The student is expected to:

(A) execute and interpret tests related to driving under the influence such as the National Traffic Highway Safety Administration Standardized Field Sobriety Test and the Horizontal Gaze Nystagmus, Walk-and-Turn, and One-Leg Stand tests;

(B) recognize and interpret indicators of impaired driving;

(C) describe methods used to detect and apprehend drivers under the influence; and

(D) prepare evidence and reports required to give court testimony related to driving under the influence.

(11) The student identifies crowd control methods. The student is expected to:

(A) explain the deployment of less-than-lethal and chemical crowd control measures;

(B) identify the need assessment of crowd management, including officer safety, surveillance, protection of life, protection of property, and requests for assistance from other officers and agencies;

(C) demonstrate establishing perimeters for crowd control; and

(D) explain the importance of identifying group leaders, followers, and victims.

(12) The student evaluates situations requiring the use of force. The student is expected to:

(A) demonstrate the use of the force continuum in simulated situations requiring varied degrees of force;

(B) explain the guidelines and restrictions imposed by state and federal governments related to the use of deadly force;

(C) identify the legal authority for the use of force;

(D) analyze and evaluate the use of less-than-lethal use of force; and

(E) analyze and evaluate the use of deadly force.

(13) The student describes procedures designed to safely transport a person in custody. The student is expected to:

(A) demonstrate a search of an individual incidental to an arrest;

(B) demonstrate the procedures for transporting a person without violating personal rights or jeopardizing personal safety;

(C) demonstrate different methods of restraining a person being transported; and

(D) discuss transporting non-custodial persons and juveniles.

(14) The student conducts interviews and interrogations of individuals ensuring protection of rights as outlined in the U.S. Constitution. The student is expected to:

(A) demonstrate interviewing and interrogation techniques; and

(B) simulate interviews of rape victims, child witnesses, and child victims.

(15) The student investigates and documents a motor vehicle accident. The student is expected to:

(A) record simulated crash scene evidence using standard report procedures;

(B) analyze simulated crash scene evidence using standard laws, regulations, and procedures;

(C) perform mathematical calculations using speed, velocity, time, and distance;

(D) draw scale diagrams of simulated collisions using templates; and

(E) interpret crash scene evidence.

(16) The student recognizes law enforcement roles in preparedness and response systems for disaster situations. The student is expected to:

(A) demonstrate knowledge of the incident command system;

(B) coordinate with response partners from all levels of government and with the private sector;

(C) evaluate incident command system applications, organizational principles and elements, positions and responsibilities, facilities and functions, and planning; and

(D) apply Federal Emergency Management Agency Incident Command Structure to a simulated scenario.

(17) The student explores procedures for handling and managing explosives and hazardous material incidents. The student is expected to:

(A) identify and classify hazardous materials;

(B) respond to a simulated situation involving explosive materials using protocols and procedures designed to maintain personal and public safety;

(C) explain procedures for responding to reports of bomb threats and suspicious objects;

(D) conduct a simulated building and property search to locate explosive devices and materials; and

(E) explain procedures for responding to hazardous material incidents.

(18) The student examines law enforcement functions regarding critical infrastructure protection from potential terrorist and natural disaster threats. The student is expected to:

(A) analyze critical infrastructure protection techniques; and

(B) develop a plan for protecting a potential target.

(19) The student explores new and emerging technologies in law enforcement. The student is expected to:

(A) research new technologies used in law enforcement such as robots to diffuse potential explosives; and

(B) explain the importance of continuing education in law enforcement.

(20) The student evaluates patrol procedures and response to calls for service encountered by first responders. The student is expected to:

(A) demonstrate the legal justification and the application of probable cause for first responders' actions during a response to a suspected offense or an actual offense;

(B) simulate conducting a misdemeanor and a high-risk traffic stop;

(C) analyze pursuit procedures such as incidents involving vehicles, motorcycles, and foot pursuits;

(D) simulate responding to a delayed crime and a crime in progress;

(E) simulate conducting a building search;

(F) simulate conducting an arrest with a warrant or a warrantless arrest;

(G) differentiate procedures when responding with one-person units, two-person units, multiple units, other agency units, and specialized units such as air, K-9, and undercover operations;

(H) compare patrol responses when responding to offenses on-view, dispatched calls, and public information requests; and

(I) demonstrate the importance of being safety conscious when in the role of being a first responder.

(21) The student evaluates the importance of first responders in developing a positive community relationship. The student is expected to:

(A) explore the development of community policing in the United States;

(B) evaluate the role of school resource officers;

(C) evaluate the role of neighborhood service officers;

(D) evaluate the role of crime prevention officers such as McGruff Safe Kids, neighborhood watch programs, store front officers, and citizens on patrol;

(E) evaluate the responsibilities of the public information officer; and

(F) conduct a crime prevention analysis.

(22) The student demonstrates procedures in investigating a crime scene. The student is expected to:

(A) identify the legal requirements for first responders to enter, remain, release, and return to a crime scene;

(B) demonstrate procedures prior to entering a crime scene and securing a crime scene;

(C) demonstrate procedures in conducting a proper search of a crime scene for evidence such as using a strip-line search, grid-quadrant search, zone-wheel search, spiral search, or base-line search;

(D) demonstrate procedures for marking and collecting evidence found in a crime scene;

(E) demonstrate procedures for measuring and sketching evidence and important landmarks in a crime scene;

(F) demonstrate procedures for photographing the crime scene and evidence during the process of investigating a crime scene, including wide angle, mid-range, spatial relationship, and close-up photographs; and

(G) demonstrate chain of custody and proper packaging of various types of evidence for transportation.

§127.758. Criminal Investigation (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Criminal Investigation is a course that introduces students to the profession of criminal investigations. Students will understand basic functions of criminal investigations and procedures and will learn how to investigate or follow up during investigations. Students will learn terminology and investigative procedures related to criminal investigation, crime scene processing, evidence collection, fingerprinting, and courtroom presentation. Through case studies and simulated crime scenes, students will collect and analyze evidence such as fingerprint analysis, bodily fluids, hairs, fibers, shoe and tire impressions, bite marks, drugs, tool marks, firearms and ammunition, blood spatter, digital evidence, and other types of evidence.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores criminal investigative procedures, investigations, and follow-up according to the profession and its job functions. The student is expected to:

(A) analyze the field of criminal investigations;

(B) compare and contrast the characteristics of an effective investigator;

(C) examine preliminary investigations such as initial response, point of arrival, priorities, emergency situations, and protection of the crime scene;

(D) research follow-up procedures for an investigation; and

(E) evaluate the effectiveness of interrelationships with individuals involved in investigations such as police officers, dispatchers, prosecutors, defense counsel, physicians, coroners, medical examiners and forensic crime laboratories, citizens, witnesses, victims, complainants, and media.

(2) The student uses proper equipment in documenting the crime scene during field investigations. The student is expected to:

(A) explain the use of field notes;

(B) demonstrate an understanding of when, what, where, and how to take notes;

(C) demonstrate how to effectively take notes during an investigation;

(D) distinguish between the advantages and disadvantages of photographs and video at a crime scene and an investigation;

(E) plan how to use digital investigative photography during an investigation at a crime scene;

(F) collect and organize a photographic sequence of photographs of a crime scene such as injuries, tool marks, fingerprints, tire impressions, footprints, bite marks, and other related evidence;

(G) analyze, evaluate, make inferences, and predict occurrences of events based on photographic evidence; and

(H) formulate ideas on admissibility of photographs in a court of law.

(3) The student uses critical-thinking and problem-solving skills to create sketches for indoor and outdoor crime scenes. The student is expected to:

(A) create a plan and make observations before sketching a crime scene, both as an individual and as a team;

(B) describe the elements of a crime scene sketch such as measurements, compass directions, scale of proportion, legend/key, and title;

(C) develop a crime scene sketch using coordinates or measurements from fixed points;

(D) summarize the crime scene by taking notes and recording details;

(E) analyze and evaluate to assess the crime scene sketch; and

(F) research and describe the final sketch such as finished scale drawing and computer assisted drawing.

(4) The student explores writing effective reports for criminal investigations. The student is expected to:

(A) distinguish among organizing information, structuring the narrative, and composing the content;

(B) identify the importance and uses of reports;

(C) analyze common problems with many investigative reports;

(D) research ways to record and dictate for future report writing; and

(E) demonstrate different ways to write a report such as in writing and computerized.

(5) The student recognizes legal searches and the Fourth Amendment as it applies to searches. The student is expected to:

(A) analyze the exclusionary rule, inevitable discovery exception, and good faith exception;

(B) explain when an officer needs a search warrant or consent to search during an investigation;

(C) research Terry v. Ohio and the legal ramifications it has on pat downs and frisks;

(D) evaluate a search incident to an arrest;

(E) describe searching during emergency situations and warrantless searches of vehicles; and

(F) demonstrate how to conduct an inventory of a vehicle.

(6) The student determines what search patterns should be used in exterior and interior searches of crime scenes. The student is expected to:

(A) analyze the precedents that were established by the Carrol v. United States, Chambers v. Florida, Chimel v. California, Mapp v. Ohio, Terry v. Ohio, and Weeks v. United States decisions;

(B) conduct a systematic search of a simulated crime scene for physical evidence following crime scene search patterns such as spiral, line, grid, and strip;

(C) demonstrate how to conduct building, vehicle, suspect, and dead body searches; and

(D) explain how police canines are used to conduct legal searches.

(7) The student recognizes the procedures of evidence collection while maintaining the integrity of a crime scene. The student is expected to:

(A) compare and contrast the roles of crime scene investigators, detectives, and crime scene investigators;

(B) demonstrate the ability to work as a member of a team;

(C) discover and recognize evidence at a simulated crime scene;

(D) apply knowledge of the elements of criminal law that guide search and seizure of persons, property, and evidence;

(E) outline the chain-of-custody procedure for evidence discovered in a crime scene;

(F) demonstrate proper techniques for collecting, marking, photographing, packaging, preserving, and transporting physical evidence found at a crime scene;

(G) explain and demonstrate the use of video and still photography to preserve a simulated crime scene; and

(H) analyze the use of evidence in a court of law.

(8) The student recognizes the methods to process and analyze trace evidence commonly found in a crime scene. The student is expected to:

(A) demonstrate how to process trace evidence such as glass, blood, paint, fibers, and hair collected in a simulated crime scene;

(B) identify shoe and tire impressions from sample impressions;

(C) determine the direction of a projectile by examining glass fractures;

(D) analyze bite marks from crime scenes and investigations;

(E) compare and contrast the microscopic characteristics of the human hair and animal hair; and

(F) differentiate between natural and synthetic fibers.

(9) The student analyzes collected fingerprints or impressions from a simulated crime scene. The student is expected to:

(A) compare the three major fingerprint patterns of arches, loops, and whorls and their respective subclasses;

(B) identify minutiae of fingerprints, including bifurcations, ending ridges, islands, dots, short ridges, and enclosures;

(C) distinguish among patent, plastic, and latent impressions;

(D) perform laboratory procedures for lifting latent prints on porous and nonporous objects using chemicals such as iodine, ninhydrin, silver nitrate, and cyanoacrylate resin;

(E) perform laboratory procedures for lifting latent prints on nonporous objects using fingerprint powders such as black powder and florescent powders;

(F) explain the Automated Fingerprint Identification System (AFIS) and describe the characteristics examined in AFIS; and

(G) compare impression evidence collected at a simulated crime scene with the known impression.

(10) The student analyzes blood spatter at a simulated crime scene. The student is expected to:

(A) analyze blood stain patterns based on source, direction, and angle of trajectory; and

(B) explain the method of chemically identifying and locating an invisible blood stain using reagents such as luminol.

(11) The student explores toxicology laboratory procedures in crime labs. The student is expected to:

(A) analyze the absorption, distribution, and elimination of alcohol through the human body;

(B) research the blood alcohol laboratory procedures as they relate to blood alcohol concentration;

(C) explain the levels of tolerance and impairment due to alcohol consumption; and

(D) explain the precautions necessary for proper preservation of blood samples while at a crime scene.

(12) The student explores serology laboratory procedures in criminal investigations. The student is expected to:

(A) explain crime laboratory procedures to determine if a stain detected in a crime scene is blood; and

(B) research methodologies used to collect and analyze other body fluids.

(13) The student identifies drugs found at a simulated crime scene. The student is expected to:

(A) classify controlled substances using the schedules under the Controlled Substances Act; and

(B) identify controlled substances.

(14) The student evaluates bullet and tool mark impressions in a criminal investigation. The student is expected to:

(A) explain the individual characteristics of tool marks;

(B) describe the mechanism of modern firearms;

(C) recognize characteristics of bullet and cartridge cases;

(D) describe the composition of and method of analysis for gunshot residue and primer residue; and

(E) recognize the type of information available through the National Integrated Ballistics Information Network.

(15) The student calculates the time and cause of death in relationship to decomposition of the human body. The student is expected to:

(A) explain the process and timeline of rigor mortis and its role in calculating time of death;

(B) explain post mortem lividity and its importance when processing a crime scene;

(C) determine time of death using entomology; and

(D) determine time and cause of death methodologies through case studies.

(16) The student understands how physical evidence can provide a basis for questioning people about a crime and how questioning can provide leads for finding physical evidence. The student is expected to:

(A) explain the terms victim, complainant, witness, and suspect as they apply to a criminal investigation;

(B) demonstrate interviewing and interrogating throughout an investigation;

(C) demonstrate effective questioning techniques and positive communication skills;

(D) analyze the importance of reading the Miranda Warnings during interviewing and interrogating; and

(E) describe the techniques used to interview and question children and juveniles.

(17) The student develops a suspect profile when there is not a suspect at the crime scene and a suspect is not apprehended nearby. The student is expected to:

(A) compile information provided by victims, witnesses, and other persons likely to know about the crime or the suspect;

(B) examine physical evidence left at the crime scene to determine a suspect profile;

(C) identify a suspect Modus Operandi at a crime scene;

(D) analyze computerized composite sketch applications such as Identi-Kit;

(E) describe techniques used to create photo line ups, identification, and mug shots; and

(F) research audio, video, and electronic surveillance.

§127.759. Court Systems and Practices (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Law Enforcement I or Principles of Government or Public Administration. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Court Systems and Practices is an overview of the federal and state court systems. The course identifies the roles of judicial officers and the trial processes from pretrial to sentencing and examines the types and rules of evidence. Emphasis is placed on constitutional laws for criminal procedures such as search and seizure, stop and frisk, and interrogation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student examines the structure of the legal system in the United States. The student is expected to:

(A) trace the history, structure, and function of state and federal court systems and criminal procedure;

(B) compare and contrast the state court system and the federal court system;

(C) explain and illustrate how jurisdiction impacts criminal charges and trial proceedings;

(D) explain and interpret the purposes of law regarding criminal acts and behaviors;

(E) distinguish between constitutional law, case law, statutory law, and administrative law;

(F) identify the differences in processing a misdemeanor and felony case;

(G) describe and interpret the impact of the grand jury process on court proceedings regarding criminal scenarios;

(H) examine relationship of the U.S. Constitution and the Bill of Rights upon the court system; and

(I) describe the impact of public opinion and the legislature on the U.S. court system.

(2) The student explores the roles and responsibilities of members of courtroom work groups. The student is expected to:

(A) explain the roles of professionals such as the police, prosecutor, judge, victim advocates, and criminal defense attorney in the criminal process;

(B) examine the roles and importance of members of the courtroom such as the jury, bailiff, and court reporter;

(C) analyze the impact of the victim and the defendant upon the courtroom process; and

(D) discuss the dynamics of assembly line justice and discretion found in court proceedings.

(3) The student recognizes communication skills needed for courtroom policies and procedures. The student is expected to:

(A) use communication skills to evaluate body language such as gestures, verbal tone, and inflection during testimony;

(B) demonstrate interpersonal communication skills; and

(C) apply writing skills to formulate effective field note taking and report writing.

(4) The student examines the steps by which a criminal charge is processed through pretrial, trial, adjudication, and the appellate stages. The student is expected to:

(A) examine the interaction between police and prosecutor in filing complaints and making a decision to charge such as Defenses to Prosecution and application of various definitions of intent;

(B) explain pretrial court proceedings such as rules of discovery, challenges to evidence, and the bail process;

(C) distinguish between direct and circumstantial evidence and burden of proof for federal and state courts;

(D) explore the impact of pleas and plea bargaining on the trial proceedings;

(E) identify the trial process from pretrial to sentencing;

(F) evaluate a simulated criminal case; and

(G) conduct a mock trial demonstrating understanding of the criminal trial procedure.

(5) The student explains the structure and provisions of the U.S. Constitution and the Bill of Rights and how they impact the criminal trial process. The student is expected to:

(A) apply the police responsibilities under the Fourth Amendment regarding search and seizure in a simulated arrest scenario;

(B) determine if a search initiated in a scenario is proper under the provisions of the Fourth Amendment;

(C) analyze the exclusionary rule and the fruit of the poisonous tree doctrine to determine if evidence obtained in an illegal search scenario is admissible in court;

(D) explain the impact of the Eighth, Ninth, and Tenth amendments on the criminal justice system;

(E) analyze the effect of landmark cases such as Miranda v. Arizona, Weeks v. United States, Mapp v. Ohio, Douglas v. California, and Escobedo v. Illinois on individuals entering the criminal justice system;

(F) describe the due process rights of a criminal suspect in the trial and sentencing process; and

(G) explain the impact of the Fifth and Sixth amendments on the criminal trial process.

§127.760. Federal Law Enforcement and Protective Services (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Federal Law Enforcement and Protective Services provides the knowledge and skills necessary to prepare for certification in security services for federal law enforcement and protective services. The course provides an overview of security elements and types of organizations with a focus on security measures used to protect lives, property, and proprietary information, to ensure computer security, to provide information assurance, and to prevent cybercrime.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards as required by federal law enforcement and protective services. The student is expected to:

(A) demonstrate positive work behaviors and attitudes and professional standards in federal law enforcement and protective services;

(B) support and apply ethical reasoning to a variety of simulation situations in order to make ethical decisions;

(C) demonstrate teamwork skills through working cooperatively with others to achieve tasks such as team building, consensus, continuous improvement, respect of opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate sensitivity to and value for diversity and confidentiality; and

(E) demonstrate an understanding of content, technical concepts, and vocabulary when analyzing information, following directions, conveying information, and accessing information sources such as texts, Internet websites, and technical materials.

(2) The student explores the history of federal law enforcement and protective services in the United States. The student is expected to:

(A) research the development of federal law enforcement and protective services through the history of the United States; and

(B) explain the importance of the interface between federal law enforcement and protective services and other aspects of law enforcement.

(3) The student identifies health, safety, and environmental responsibilities of federal law enforcement and protective services personnel in establishing and maintaining a safe work environment. The student is expected to:

(A) identify workplace hazards to health, safety, and the environment;

(B) inspect a workplace to identify potential health, safety, and environmental problems;

(C) investigate and document findings in simulated workplace incidents and accidents; and

(D) summarize issues and problems associated with hazardous materials.

(4) The student analyzes the impact of ethical and legal responsibilities relevant to federal law enforcement and protective services. The student is expected to:

(A) differentiate between civil and criminal law;

(B) analyze the impact of legal issues relevant to federal law enforcement and protective services;

(C) describe the importance of good public relations techniques as they relate to federal law enforcement and protective services and crisis situations;

(D) analyze the connections between constitutional and federal laws, federal law enforcement, and private security operations by referencing relevant constitutional amendments;

(E) analyze specific federal, state, and local laws and regulations affecting government security operations;

(F) summarize specific juvenile laws affecting security operations;

(G) compare alternative responses in simulated security scenarios that require application of ethical and legal behavior;

(H) discuss the possible ramifications of unethical behavior on the part of security professionals;

(I) analyze the importance of the Fourth Amendment with respect to security officer powers of arrest, search, and seizure;

(J) summarize the due process rights granted to individuals by the Fifth Amendment during an interrogation;

(K) analyze the impact of the Fourteenth Amendment as it relates to due process and equal protection of the law; and

(L) analyze the importance of social media and be familiar with its effects on federal law enforcement and protective services.

(5) The student explains risk management principles as they apply to security functions for the protection of assets. The student is expected to:

(A) describe the sources of natural, intentional, and unintentional threats such as information assurance, computer security, cybercrime, human trafficking, border security, and domestic and foreign terrorism;

(B) present examples that depict potential physical, electronic, procedural, and personnel vulnerabilities;

(C) summarize the concept of risk management from a local, state, federal, and national security perspective, including the importance of knowing what to protect and the consequences of loss; and

(D) explain how security operations and the criminal justice field interface and rely upon each other.

(6) The student analyzes the role of computer forensics in security operations. The student is expected to:

(A) summarize the role of computer applications relating to forensics investigations; and

(B) investigate criminal activity in areas such as cybercrime, the Internet, and Internet trafficking.

(7) The student analyzes security systems and their role in an overall security strategy. The student is expected to:

(A) summarize the purposes, types, and applications of physical and electronic access control systems, surveillance systems, and intrusion detection systems;

(B) analyze how physical and electronic systems work together as an integrated system to support an overall protection strategy; and

(C) analyze the roles of security surveys, inspections, and exercises to test existing protection measures.

(8) The student investigates disaster response in emergency situations as it relates to the duties of a security officer for the protection of persons, property, and information. The student is expected to:

(A) summarize the characteristics of terrorism as a criminal act; and

(B) examine the elements and techniques of critical infrastructure protection to reduce the risk to key terrorist targets and the impact of natural disasters.

(9) The student recognizes the role of intelligence analysis in crime prevention and homeland security. The student is expected to:

(A) summarize the steps of the intelligence cycle such as planning, collection, collation, evaluation, analysis, dissemination, and feedback; and

(B) execute a crime pattern analysis identifying links between a given crime and a set of potentially related incidents.

(10) The student applies crime prevention concepts. The student is expected to:

(A) diagram the crime triangle of ability, opportunity, and motive;

(B) describe the concepts of deter, detect, delay, and deny; and

(C) evaluate the security of a business or residence by using crime prevention through environmental design strategies.

(11) The student evaluates situations requiring the use of force. The student is expected to:

(A) demonstrate the use of the force continuum in simulated situations requiring varied degrees of force; and

(B) explain the guidelines and restrictions imposed by state and federal governments related to the use of deadly force.

(12) The student analyzes procedures and protocols for self-defense in homeland security and protective services. The student is expected to demonstrate self-defense and defensive tactics such as ready stance, escort positions, strikes, kicks, punches, handcuffing, and searching.

(13) The student recognizes the importance of critical infrastructures and key assets. The student is expected to:

(A) discuss the importance of critical infrastructure and key assets within federal law enforcement and protective services such as water, power and energy, information, transportation, banking and finance, defense, postal and shipping, agricultural and food, public health, and emergency services; and

(B) create a plan of action for city and state for situations involving threats to critical infrastructure and key assets.

(14) The student identifies chemical and biological threat identification, protection, detection, and decontamination concepts. The student is expected to:

(A) analyze research on the cause and effects of chemical threats such as airborne pathogens and toxic, nuclear, biological, and manmade chemicals; and

(B) create research projects on the cause and effects of chemical threats such as airborne pathogens and toxic, nuclear, biological, and manmade chemicals.

(15) The student recognizes law enforcement roles in preparedness and response systems for disaster situations. The student is expected to:

(A) develop a plan of action for disaster preparedness within home, school, or community;

(B) evaluate the effectiveness of the actions in place for all natural disasters;

(C) evaluate the effectiveness of preparedness and response systems during and after a disaster;

(D) appraise a disaster situation to determine the appropriate course of action;

(E) examine and implement the Community Emergency Response Team (CERT) guidelines for home, school, or community such as fire safety, disaster medical operations, search and rescue, and terrorism; and

(F) construct a CERT disaster simulation within the school or community.

§127.761. Principles of Government and Public Administration (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-11. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Principles of Government and Public Administration introduces students to foundations of governmental functions and career opportunities within the United States and abroad. Students will examine governmental documents such as the U.S. Constitution, current U.S. Supreme Court and federal court decisions, and the Bill of Rights.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores major political ideas and forms of government in history. The student is expected to:

(A) explain major political ideas in history such as natural law, natural rights, divine right of kings, and social contract theory;

(B) identify the characteristics of classic forms of government such as absolute monarchy, authoritarianism, classical republic, despotism, feudalism, liberal democracy, and totalitarianism; and

(C) explore aspects of public service and related careers at international, federal, state, and local levels.

(2) The student understands how constitutional government, as developed in the United States, has been influenced by people, ideas, and historical documents. The student is expected to:

(A) analyze the principles and ideas that underlie the Declaration of Independence and the U.S. Constitution;

(B) explain the importance of a written constitution and how the federal government serves the purposes set forth in the U.S. Constitution;

(C) explore how the Federalist Papers explain the principles of the U.S. constitutional system of government;

(D) evaluate constitutional provisions for limiting the role of government such as republicanism, checks and balances, federalism, separation of powers, popular sovereignty, and individual rights;

(E) analyze the contributions of the political philosophies of the founding fathers and explain why they created a distinctly new form of federalism and adopted a federal system of government instead of a unitary system;

(F) evaluate the limits on the national and state governments in the U.S. federal system of government and how the U.S. Constitution can be amended;

(G) categorize, diagram, or create a descriptive representation of the government powers as national, state, or shared government;

(H) analyze historical conflicts over the respective roles of national and state governments in the United States; and

(I) identify significant individuals and their roles in the field of government and politics, including ambassadors, elected officials, and appointed officials.

(3) The student compares the similarities and differences that exist among the U.S. system of government and other political systems. The student is expected to:

(A) compare and contrast the U.S. system of government with other political systems; and

(B) analyze advantages and disadvantages of presidential and parliamentary systems of government.

(4) The student explores rights guaranteed by the U.S. Constitution. The student is expected to:

(A) identify the rights guaranteed by the Bill of Rights;

(B) evaluate the role of limited government and the rule of law for the protection of individual rights;

(C) identify and recognize issues addressed in critical cases that involve U.S. Supreme Court interpretations of rights guaranteed by the U.S. Constitution;

(D) define the roles of each branch of government in protecting the rights of individuals;

(E) explain the importance of due process rights to the protection of individual rights and to the limits on the powers of government; and

(F) recognize the impact of the incorporation doctrine involving due process and the Bill of Rights on individual rights, federalism, and majority rule.

(5) The student recognizes the difference between personal and civic responsibilities. The student is expected to:

(A) explain the difference between personal and civic responsibilities of citizens versus non-citizens;

(B) present how, why, and when the rights of individuals are inviolable even against claims for the public good;

(C) analyze the consequences on society of political decisions and actions; and

(D) investigate the role of municipal management in serving public and personal good.

(6) The student recognizes the importance of voluntary individual participation in the U.S. democratic society. The student is expected to:

(A) present how to measure the effectiveness of participation in the political process at local, state, and national levels;

(B) review, document, and explain how historical and contemporary examples of citizen movements were used to bring about political change or to maintain continuity;

(C) evaluate different leadership styles and their impact on participation;

(D) explain the factors that influence an individual's political attitudes and actions;

(E) compare effectiveness of leadership characteristics of state and national leaders; and

(F) explain the importance of volunteer public service in bringing about political change and maintaining continuity.

(7) The student recognizes the relationship between government policies and the culture of the United States. The student is expected to:

(A) identify a political policy or decision in the United States that was a result of changes in American culture;

(B) discuss changes in American culture brought about by government policies such as voting rights, the GI Bill, and racial integration;

(C) present an example of a government policy that has affected a particular racial, ethnic, or religious group; and

(D) explain the influence of individuals and/or groups that have affected change in society.

(8) The student identifies the influence of geography on governmental and public administrative functions. The student is expected to:

(A) draw conclusions about the political significance to the United States of the location and geographic characteristics of critical regions compared to the economic significance of the geographic characteristics of selected places such as oil fields in the Middle East using maps and Global Positioning System (GPS) locations;

(B) interpret geographical influences on requirements for international, national, state, and local governments;

(C) predict how geographical considerations impact regional change over time;

(D) interpret the importance of cultural symbols in the planning of government activities;

(E) explore how geographic information systems assist in gathering information; and

(F) connect a positive or negative effect of a government policy to the physical and human characteristics of a place or region.

(9) The student interprets and applies concepts of governance to assess functions of government and public administration in society. The student is expected to:

(A) recall historical debates and recognize the compromises necessary to reach landmark political decisions;

(B) give examples of the processes used by individuals, political parties, interest groups, or the media to affect public policy;

(C) explore the impact of political changes brought about by individuals, political parties, interest groups, or the media;

(D) recognize how the American beliefs and principles reflected in the U.S. Constitution contribute to our national identity;

(E) evaluate the alignment of institutions of government and public administration with the principles of U.S. and international law to guide policy development; and

(F) analyze how U.S. foreign policy affects other countries.

(10) The student works with different forms and methods of communication used to manage and facilitate the flow of ideas and information among government, public administration, the business community, and the general public. The student is expected to:

(A) analyze the structure and functions of the legislative branch of government such as the bicameral structure of Congress, the role of committees, and the procedure for enacting laws;

(B) analyze the structure and functions of the executive branch of government such as the constitutional powers of the president, the growth of presidential power, and the role of the cabinet and executive departments;

(C) analyze the structure and functions of the judicial branch of government, including the federal court system and types of jurisdiction;

(D) analyze the functions of selected independent executive and regulatory agencies;

(E) explain how certain provisions of the U.S. Constitution provide for checks and balances among the three branches of government;

(F) analyze selected issues raised by judicial activism and judicial restraint;

(G) compare and contrast the structures and functions of the Texas state government to the federal system;

(H) analyze the structure and functions of local government;

(I) document, report, and record information to conform to legal requirements;

(J) research safety standards and practices ensuring public safety and environmental protection;

(K) investigate how to comply with directives to ensure protection of confidential information while carrying out duties as a government or public administration employee;

(L) compare and contrast the concepts of ethical conduct to comply with all laws and regulations affecting governmental agencies; and

(M) describe the accepted principles of financial management to administer budgets, programs, and human resources.

(11) The student uses technologies to research common objectives of government and public administration. The student is expected to:

(A) access appropriate information technologies to accomplish tasks;

(B) integrate appropriate information technologies to accomplish tasks;

(C) identify examples of government-assisted research that, when shared with the private sector, has resulted in improved consumer products such as computer and communication technologies;

(D) analyze how U.S. government policies fostering competition and entrepreneurship have resulted in scientific discoveries and technological innovations;

(E) analyze the potential impact on society of recent scientific discoveries and technological innovations;

(F) analyze the reaction of government to scientific discoveries and technological innovations; and

(G) explain the concept of intellectual property.

§127.762. Political Science I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Political Science I introduces students to political theory through the study of governments; public policies; and political processes, systems, and behavior.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student compares and contrasts current, classic, or contemporary political theories. The student is expected to:

(A) discuss why theories are important to the study of political science;

(B) draw conclusions about the classic political theorists such as Plato, Aristotle, Cicero, Machiavelli, Confucius, Hobbes, Locke, Hegel, and Marx;

(C) define the characteristics of contemporary political theories such as behaviorialism, postbehavioralism, systems theory, modernization theory, structural-functionalism, developmentalism, rational-choice theory, and new institutionalism;

(D) compare and contrast the evolution of classic and contemporary theories; and

(E) make predictions and defend opinions about the future of political science theory.

(2) The student explores historical origins of government. The student is expected to:

(A) describe the features of different types of government such as democracy, theocracy, republic, monarchy, dictatorship, communism, and socialism;

(B) use a map to label where each form of government is currently practiced or has been practiced in the past;

(C) explain how each form of government arose throughout history;

(D) develop a logical argument for the origin of different types of government; and

(E) hypothesize why some forms of government became obsolete.

(3) The student analyzes belief systems that claim to improve society. The student is expected to:

(A) define political ideologies such as feminism, Marxism, Nazism, and capitalism;

(B) coordinate the four elements of perception, evaluation, prescription, and movement with political ideologies; and

(C) predict what national or global trends could stimulate the formation of a new ideology.

(4) The student applies the concepts learned in the history and ideology of political science. The student is expected to:

(A) make observations regarding the political culture of emerging nations or nations with recent current events; and

(B) research and present the political culture of a country.

(5) The student identifies the roles played by local, state, and national governments in public and private sectors of the U.S. free enterprise system. The student is expected to:

(A) recognize that government policies influence the economy at the local, state, and national levels;

(B) identify the sources of revenue of the U.S. government and analyze their impact on the U.S. economy;

(C) identify the sources of expenditures of the U.S. government and analyze their impact on the U.S. economy;

(D) compare and contrast the role of government in the U.S. free enterprise system and other economic systems; and

(E) explain the effects of international trade on U.S. economic and political policies.

(6) The student analyzes public opinion. The student is expected to:

(A) investigate sources and influences of public opinion;

(B) analyze the effect of public opinion on leadership;

(C) critique the reliability of public opinion and how it is measured; and

(D) compare and contrast the effects of expressed public opinion on poll items such as elections, elected official behavior, tax policy, services, and environmental protection.

(7) The student identifies interest groups. The student is expected to compare and contrast the positive and negative aspects of interest groups such as public interest research groups, lobbies, and political action committees.

(8) The student analyzes the election process. The student is expected to:

(A) review the process of electing public officials;

(B) recognize the influence of political parties in elections;

(C) explore the phenomenon of political image;

(D) describe the cause-and-effect relationship of communication style in a campaign; and

(E) compare and contrast the effectiveness of telephones, television, print media, focus groups, and online resources in elections.

(9) The student explores the processes for filling public offices in the U.S. system of government. The student is expected to:

(A) compare and contrast different methods of filling public offices such as elected and appointed offices at the local, state, and national levels; and

(B) analyze and evaluate the processes of electing the president of the United States.

(10) The student examines the role of political parties in the U.S. system of government. The student is expected to:

(A) discuss the functions of the two-party system;

(B) compare and contrast the role of third parties in the United States;

(C) recognize the role of political parties in the electoral process at the local, state, and national levels; and

(D) identify opportunities for citizens to participate in the electoral process at the local, state, and national levels.

(11) The student applies the concepts of statistical analysis to political science. The student is expected to:

(A) examine concepts used in research such as theories, hypotheses, independent and dependent variables, sampling, reliability, validity, and generalizability; and

(B) compare and contrast the types of statistical data such as in political science journals, public opinion polls, and surveys.

§127.763. Political Science II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration or Political Science I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Political Science II uses a variety of learning methods and approaches to examine the processes, systems, and political dynamics of the United States and other nations. The dynamic component of this course includes current U.S. and world events.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes public administration and public affairs. The student is expected to:

(A) explore the ancient history of public administration;

(B) consider whether current practices of public administration are improvements upon older practices;

(C) explain the term bureaucracy and draw conclusions as to why public perception of bureaucracy is poor;

(D) analyze the effects of poor public perception on leadership style;

(E) analyze political pluralism, displacement and concentration hypothesis, and technological complexity;

(F) recognize that public management involves evaluation of productivity, budgets, and human resources; and

(G) research, investigate, and explain specific examples of ethics issues in public administration.

(2) The student identifies the cause and effect of expression of different viewpoints in a democratic society. The student is expected to:

(A) compare different points of view of political parties and interest groups on important contemporary issues;

(B) analyze the importance of free speech and press in a democratic society; and

(C) express the student's point of view on an issue of contemporary interest in the United States.

(3) The student analyzes international relations. The student is expected to:

(A) examine the historical development of the international system;

(B) compare and contrast the classical international system, the transitional international system, the post-World War II international system, and the contemporary international system;

(C) research national actors and international interactions;

(D) examine the rational actor model;

(E) analyze what a nation-state does when faced with a problem that requires resolution;

(F) make observations about ethics in foreign policy; and

(G) draw conclusions about the role of morality in decision making such as Cold War spying and humanitarian intervention.

(4) The student explores diplomacy as the management of international relations by negotiation. The student is expected to:

(A) compare and contrast the ancient practice of sending emissaries with current embassy activities;

(B) identify embassy and ambassador roles in international relations;

(C) distinguish between types of diplomacy such as public versus secret, multilateral versus bilateral, and tacit versus formal;

(D) use concepts of bargaining and game theory to solve problems;

(E) recognize national versus state approaches to armed force when diplomacy breaks down;

(F) analyze force without war, causes of war, and the consequences of war; and

(G) analyze the role of international law in treaties, customs, immigration, and human rights.

(5) The student analyzes international governmental organizations and non-governmental organizations. The student is expected to:

(A) identify prominent international governmental organizations and non-governmental organizations;

(B) explore the methods of operation and function of international governmental organizations and non-governmental organizations in global problem solving; and

(C) propose a solution for an international relations problem such as arms control, terrorism, commerce, currency, natural resource management, food, or population control.

(6) The student analyzes the flow of ideas and information among the federal government, public administration, the business community, and the global societies. The student is expected to:

(A) examine concepts of authority, rights, and responsibilities to evaluate their impact on the governance of societies;

(B) explain the major responsibilities of the federal government for domestic and foreign policy;

(C) practice communication techniques used to stimulate the exchange of ideas and develop international, national, state, and local networks to accomplish governmental goals; and

(D) interpret the impact of international, national, state, or local politics on the goals of governmental or public administrative agencies.

§127.764. Foreign Service and Diplomacy (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration or Principles of Law, Public Safety, Corrections, and Security. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Foreign Service and Diplomacy provides the opportunity for students to investigate the knowledge and skills necessary for careers in foreign service. The course includes law, history, media communication, and international relations associated with the diplomatic environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) communicate effectively with others using oral and written skills;

(B) demonstrate collaboration skills through teamwork;

(C) demonstrate professionalism by conducting oneself in a manner appropriate for the profession and workplace;

(D) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(E) show integrity by choosing the ethical course of action and complying with all applicable rules, laws, and regulations; and

(F) demonstrate time-management skills by prioritizing tasks, following schedules, and tending to goal-relevant activities in a way that uses time wisely and optimizes efficiency and results.

(2) The student integrates knowledge and presentation skills related to diplomacy and representing the United States to host-country officials, media personnel, and traveling officials. The student is expected to:

(A) demonstrate the ability to provide host-country officials with information on U.S. government and culture;

(B) demonstrate an understanding of organizing exchange programs to familiarize future host-country decision makers with U.S. institutions, customs, and culture;

(C) analyze the effectiveness of foreign support programs and other efforts of U.S. economic, intelligence, and affiliate agencies;

(D) demonstrate how to address and respond to media personnel on matters of U.S. policy raised in conjunction with visits of U.S. officials; and

(E) demonstrate how to address and respond to media personnel on matters of U.S. policy in reaction to unanticipated events.

(3) The student applies knowledge of foreign history, law, geography, and natural resources to recommend new or modified foreign service efforts. The student is expected to:

(A) describe responses of host-country personnel to U.S. programs and official visits;

(B) analyze and report the impact of American travelers and popular culture on a host country; and

(C) assess the impact of host-country responses to catastrophic events.

(4) The student applies U.S. and host-country laws, regulations, policies, and procedures to administrative management. The student is expected to:

(A) apply U.S. immigration laws and regulations to determine eligibility of individuals;

(B) explain grounds for refusal of visas;

(C) research documents and databases related to U.S. and host-country laws, regulations, policies, or procedures; and

(D) apply identification and documentation procedures.

(5) The student applies knowledge of host-country laws, customs, and effective administrative practices to manage the conduct of diplomatic operations. The student is expected to:

(A) model negotiations with a host government on reciprocity issues, taxation, diplomatic status, and other matters affecting welfare, security, and status of mission; and

(B) design a program that buys and sells goods and services for diplomatic operations.

§127.765. Planning and Governance (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Planning and Governance provides the opportunity for students to formulate plans and policies to meet social, economic, and physical needs of communities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies the skills necessary to manage and modify the community planning process. The student is expected to:

(A) relate physical design to functioning of environment;

(B) analyze data relative to a project on present and future needs;

(C) assess legal aspects of regulatory compliance in planning;

(D) evaluate the presentation of class activity in regard to regulations and procedures;

(E) perform mapping and graphic functions skills;

(F) predict the interaction between economy, transportation, health and human services, and land regulation and make recommendations for the future of an activity or project; and

(G) record or document observations about local, state, and federal programs in order to provide future planning recommendations.

(2) The student develops a workplace or activity-based project and plans for land use, housing, parks and recreation, transportation, economic development, and public facilities to manage change. The student is expected to:

(A) identify emerging trends and barrier issues;

(B) practice or perform problem-solving techniques to overcome barriers to plan implementation; and

(C) evaluate the style of strategies available and necessary for achieving goals.

(3) The student creates a coherent plan for project management. The student is expected to:

(A) initiate a project, including securing class or instructor approval of project scope;

(B) plan a project;

(C) execute a project, including responding to requests for information;

(D) monitor and control a project, including demonstrating effective, cogent presentation skills for public meetings and creating a format to monitor plan budgets;

(E) close a project; and

(F) maintain professionalism in challenging group and one-on-one situations.

(4) The student uses advanced research and organizational skills to influence matters of public policy. The student is expected to:

(A) extract and evaluate ideas from research library resources and online materials;

(B) organize, structure, and conduct practice interviews with students; and

(C) compile original data and reliable source information into a student-designed objective database.

(5) The student develops reasoned, persuasive arguments to support public policy options or positions. The student is expected to:

(A) analyze and implement classical and modern patterns of rhetoric;

(B) analyze differing political, social, ideological, and philosophical perspectives;

(C) critique facts and statistical claims for accuracy and relevance; and

(D) ensure materials meet ethical standards.

(6) The student develops political instincts and understanding of political processes to gain consensus. The student is expected to:

(A) compare and contrast interests of various individuals, groups, and their representatives;

(B) explore options for promoting tolerance toward individuals and groups;

(C) employ mediation techniques;

(D) suggest alternative proposals that keep discussions from collapsing; and

(E) discuss methods of openness for decision-making or problem-solving processes.

(7) The student advocates new policies or policy changes to gain support for new or revised laws, regulations, ordinances, programs, or procedures. The student is expected to:

(A) deliver compelling arguments regarding issues or proposals;

(B) create effective media presentations and projects;

(C) employ workplace skills to show the process reactions and responses and adjust appeals accordingly;

(D) evaluate and employ techniques for motivating staff; and

(E) create project steps and activities for avoiding ethical pitfalls.

§127.766. National Security (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Principles of Government and Public Administration and Public Management and Administration or Principles of Law, Public Safety, Corrections, and Security or Junior Reserve Officer Training Corps (JROTC) coursework. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) National Security introduces the students to the aspects of disaster management. The course includes engaging simulation exercises related to natural disasters, man-made disasters, and terroristic events using homeland security programs and National Incident Management System (NIMS) programs.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores and examines the personnel and organizational structure within a security agency. The student is expected to:

(A) explore, develop, plan, and implement goals and objectives of an organization within a project or classroom activity;

(B) create and make personnel assignments and align them with job demands within a project or classroom activity;

(C) explore the processes used to implement evaluation systems and standards of a security agency; and

(D) explore and review the usage of available counseling and training resources using online or written materials.

(2) The student analyzes the leadership skills necessary to ensure compliance with rules of engagement and other applicable ethical standards. The student is expected to:

(A) identify rules of engagement for local, state, federal, and international agencies;

(B) evaluate U.S. and international laws, treaties, and conventions applicable to military or other security agency conduct;

(C) employ and evaluate the usage of effective training materials;

(D) facilitate and participate in group discussions of ethical issues raised by current events;

(E) investigate compliance with procedures and laws such as U.S. military, international military, maritime, criminal, and civil laws;

(F) apply current rulings and regulatory laws, rules, or standards to appropriate situations; and

(G) recognize and evaluate actions in violation of laws, rules, and standards.

(3) The student analyzes intelligence information from within and outside the United States through simulated exercises. The student is expected to:

(A) explore the scope and limits of an assigned mission in a simulated exercise;

(B) evaluate physical, psychological, cultural, and military threats of a simulated exercise;

(C) define the specific goals and intentions of foreign entities relevant to a mission;

(D) analyze physical characteristics of areas that could become battlegrounds in time of war;

(E) explore and review methods used to direct ground and sea surveillance;

(F) explore and review methods used to intercept foreign military communications; and

(G) explore and review methods used to coordinate information with other national security agencies.

(4) The student practices methods that translate and analyze signals to discover elements indicative of intent, plans, and operations of potentially hostile governments, groups, or individuals. The student is expected to:

(A) organize evidence to facilitate discovery of a potentially hostile nature; and

(B) evaluate agency and national actions of a potentially hostile nature.

(5) The student prepares and coordinates strategies to defend against the effects of chemical, biological, nuclear, and cyberterrorism or natural disasters. The student is expected to:

(A) create plans for response to both hostile and unintended events;

(B) explore and evaluate what form of safety equipment and supplies are needed for protection against chemical, biological, or nuclear effects;

(C) explore and evaluate the available intelligence information for determination of response plan implementation;

(D) create a device or project for monitoring local and global intelligence such as using information about weather and geophysical events;

(E) explore and discuss what methods are needed to maintain communications with federal, state, and local agencies; and

(F) identify and review issues that exist within the security and safety of network cyber-based systems.

(6) The student develops strategies to train persons potentially performing national security tasks. The student is expected to:

(A) explore methods and materials used to analyze missions for which training is to be provided;

(B) plan and evaluate current and past training methods; and

(C) explore and review how agencies devise means of evaluating trainee progress.

§127.767. Public Management and Administration (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration or Business Management or Business Law. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Public Management and Administration reviews actions and activities that governments and nonprofit administrations commonly use and that resemble private-sector management. Students will be introduced to management tools that maximize the effectiveness of different types and styles of administrators and affect the quality of life of citizens in the community.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes management theories. The student is expected to:

(A) explore the various management theories such as Venn Diagram, Theory X, Theory Y, and Theory Z and how they are used effectively in public administration and management; and

(B) compare and contrast management of government and nonprofit agencies to management in the private sector.

(2) The student compares and contrasts department vision, goals, and mission to support those of a public agency. The student is expected to:

(A) analyze economic, political, and social trends likely to impact an agency or department;

(B) develop expansive professional networks internally and with other organizations to broaden communication;

(C) practice and participate in the process of determining how to recruit a diverse workforce in an equitable manner;

(D) apply interpersonal skills to grasp opportunities and manage conflicts in a positive and constructive manner;

(E) emphasize the need to infuse understanding of vision, missions, and goals into all departmental activities;

(F) analyze the concept of risk management; and

(G) legally publicize all meetings at which budget and allocation decisions are to be discussed.

(3) The student practices the process of facilitating the flow of ideas and information to keep the agency and its constituency informed of departmental policies and operations. The student is expected to:

(A) address reluctance of employees to share work product and intellectual property;

(B) restate complex technical information or issues in language the general public can understand;

(C) explain, justify, or discuss public issues effectively;

(D) present techniques effectively to handle difficult interviews and situations effectively; and

(E) afford the public equal opportunity of access to all open records.

(4) The student uses agency expertise used by elected officials and others to identify, implement, and achieve common goals and objectives. The student is expected to:

(A) obtain relevant data relating to public management and non-public management from reliable sources;

(B) apply pertinent research and analytical methodologies; and

(C) assess the impact of probable changes on the public.

(5) The student uses planning and fiscal services used to fund agency priorities. The student is expected to:

(A) estimate costs according to standards for government accounting;

(B) propose options over a range of cost requirements;

(C) analyze government resources to find possibilities for new or increased funding of programs; and

(D) prepare budgets.

(6) The student develops and manages plans and systems that would meet agency needs without wasting funds or engaging in unethical behavior. The student is expected to:

(A) demonstrate an understanding of how to assist departmental staff to fulfill procurement requirements;

(B) recommend process changes to improve vendor reliability and performance;

(C) determine means of public announcements to elicit vendor interest and bids from qualified sources;

(D) identify sources that match approved vendor criteria;

(E) manage an evaluation process that would ensure each bid, proposal, or offer is evaluated completely in terms of all relevant and ethical criteria; and

(F) identify ways to safeguard proprietary information of bidders and the rights of procurement and determine the need for outside consults.

(7) The student applies laws and policies to protect or disclose information as appropriate. The student is expected to:

(A) maintain thorough familiarity with public information requirements and records maintenance and retention requirements such as the Public Information Act (Texas Government Code, Chapter 552) and the records retention requirements of Texas Government Code, Chapter 441, and Texas Local Government Code, Chapters 201-205;

(B) identify how to explain policy background and rationale to persons denied access to certain public information; and

(C) compare and contrast the reliable controls to prevent unauthorized access to or release of privileged information.

§127.768. Revenue, Taxation, and Regulation (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Government and Public Administration or Accounting I and II. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Revenue, Taxation, and Regulation provides an overview of law and investigative principles and follows agency procedures to examine evidence and ensure revenue compliance. In addition, students will learn to facilitate clear and positive communication with taxpayers and become familiar with data analysis systems and revenue-related financial problems. Students will prepare projects and class activities to simulate the skills needed to enforce legal compliance and regulatory standards.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the investigation and evidence collection process in mock situations similar to regulatory commissions and agents. The student is expected to:

(A) investigate potential violators by exploring leads and conducting mock client interviews;

(B) model persuasive techniques to gain cooperation such as subpoenas and other ethically and legally acceptable means;

(C) identify and differentiate between relevant and irrelevant evidence and information;

(D) examine evidence of crimes and violations while preserving and observing the rules of evidence;

(E) examine business, commercial, industrial, and agency records for accuracy and compliance;

(F) organize facts accurately, objectively, logically, and concisely;

(G) analyze matters that are prohibited or concern invasion of privacy; and

(H) simulate conducting surveillance while recording facts about observed persons, objects, and events.

(2) The student analyzes the process of agency communication with the public. The student is expected to:

(A) analyze the common accounting problem of costs deviating from standards;

(B) compare and contrast ways to coordinate work and organize information with others performing similar tasks;

(C) simulate releasing public information to minimize controversy;

(D) identify problems that arise regarding flow of information after research responsibilities are assigned and completed;

(E) create a solution to the problem of information flow and communication; and

(F) demonstrate the ability to present authoritative advice to interested parties and acquainting them with available services.

(3) The student uses critical-thinking and problem-solving skills for revenue, taxation, and regulation by analysis and interpretation of accounting data and collection activities. The student is expected to:

(A) analyze data to identify matters needing negotiations for resolution;

(B) explore and identify different noncompliant practices;

(C) recommend application of administrative and judicial remedies; and

(D) produce mock reports to provide a basis for handling similar cases or audits.

(4) The student is expected to scrutinize regulatory investigations and enforcement. The student is expected to:

(A) conduct dimensional, operational, and process inspections;

(B) measure compliance with standards, specifications, and requirements;

(C) monitor a variety of quality characteristics;

(D) research consequences of degrees of noncompliance;

(E) investigate history and circumstances of violations; and

(F) secure expertise and make referrals as needed.

§127.769. Forensic Science (One Credit), Adopted 2021.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2023-2024 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. The course is recommended for students in Grades 11 and 12. Prerequisites: one credit in biology, one credit in chemistry, integrated physics and chemistry, or physics. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Forensic Science is a survey course that introduces students to the application of science to law. Students learn terminology and procedures related to the collection and examination of physical evidence using scientific processes performed in a field or laboratory setting. Students also learn the history and the legal aspects of forensic science.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools and equipment such as scientific calculators, computers, internet access, digital cameras, video recording devices, meter sticks, metric rulers, measuring tapes, digital range finders, protractors, calipers, light microscopes up to 100x magnification, hand lenses, stereoscopes, digital scales, dissection equipment, standard laboratory glassware, appropriate personal protective equipment (PPE), an adequate supply of consumable chemicals, biological specimens, prepared evidence slides and samples, evidence packaging and tamper evident tape, evidence tents, crime scene tape, L-rulers, American Board of Forensic Odontology (ABFO) scales, alternate light sources (ALS) and ALS protective goggles, blood specimens, blood presumptive tests, glass samples of various chemical composition, human and non-human bones, fingerprint brushes and powders, lifting tapes and cards, ten-print cards and ink pads, swabs with containers, disposable gloves, and relevant and necessary kits;

(E) collect quantitative data with accuracy and precision using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using appropriate methods of communication such as reports, graphs, tables, or charts;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(2) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(3) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(4) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of diverse scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field.

(5) The student explores the history of forensic science. The student is expected to:

(A) analyze the historical development and current advancements of different forensic science disciplines such as forensic biology, anthropology/odontology, forensic chemistry, trace evidence, ballistics, fingerprints, digital forensics, and questioned documents; and

(B) explain significant historical and modern contributions to the development and advancement of forensic science made by contributors such as Edmond Locard, Mathieu Orfila, Francis Galton, Edwin Henry, and Alec Jeffreys.

(6) The student analyzes legal aspects within forensic science. The student is expected to:

(A) summarize the ethical standards required of a forensic science professional;

(B) identify and explain knowledge of terminology and procedures employed in the criminal justice system as they pertain to the chain of custody procedure for evidence;

(C) identify and explain knowledge of terminology and procedures employed in the criminal justice system as they pertain to expert witness testimony;

(D) research and discuss the effect of biases such as confirmation bias and framing cognitive bias on evidence collection, forensic analysis, and expert testimony; and

(E) compare the admissibility of expert witness testimony in terms of the Frye Standard and the Daubert Standard under federal rules of evidence.

(7) The student explores career options within forensic science. The student is expected to:

(A) explore and describe discipline-specific requirements for careers in forensic science, including collegiate course requirements, licensure, certifications, and physical and mental capabilities;

(B) differentiate the roles and responsibilities of professionals in the criminal justice system, including forensic scientists, crime scene investigators, criminologists, court systems personnel, and medicolegal death investigations; and

(C) differentiate the functions of various forensic science disciplines such as forensic biology, forensic chemistry, trace evidence, ballistics, fingerprints, digital forensics, and questioned documents.

(8) The student recognizes the procedures of crime scene investigation while maintaining scene integrity. The student is expected to:

(A) explain the roles and tasks needed to complete a crime scene examination, which may require collaboration with outside experts and agencies, and demonstrate the ability to work as a member of a crime scene team;

(B) develop a detailed, technical written record based on observations and activities, documenting the crime scene examination;

(C) discuss the elements of criminal law that guide search and seizure of persons, property, and evidence;

(D) conduct a primary and secondary systematic search of a simulated crime scene for physical evidence utilizing search patterns such as spiral, line, grid, and zone;

(E) document a crime scene using photographic or audiovisual equipment;

(F) generate a physical or digital crime scene sketch, including coordinates or measurements from fixed points, compass directions, scale of proportion, legend-key, heading, and title block; and

(G) demonstrate proper techniques for collecting, packaging, and preserving physical evidence found at a crime scene while maintaining documentation, including chain of custody.

(9) The student analyzes fingerprint evidence in forensic science. The student is expected to:

(A) compare the three major fingerprint patterns of arches, loops, and whorls;

(B) identify the minutiae of fingerprints, including bifurcations, ending ridges, dots, short ridges, and enclosures/islands;

(C) distinguish between patent, plastic, and latent impressions;

(D) perform procedures for developing and lifting latent prints on nonporous surfaces using cyanoacrylate and fingerprint powders;

(E) perform procedures for developing latent prints using chemical processes on porous and adhesive surfaces with chemicals such as ninhydrin and crystal violet and documenting the results via photography; and

(F) explain the Integrated Automated Fingerprint Identification System (IAFIS) and describe the implications of Next Generation Identification (NGI) systems.

(10) The student collects and analyzes impression evidence in forensic science. The student is expected to:

(A) analyze the class and individual characteristics of tool mark impressions and the recovery and documentation of surface characteristics such as wood or metal;

(B) analyze the class and individual characteristics of footwear impressions and the recovery and documentation of surface characteristics such as soil or organic plant material;

(C) analyze the class and individual characteristics of tire tread impressions and the recovery documentation of surface characteristics such as soil or organic plant material; and

(D) compare impression evidence collected at a simulated crime scene with the known impression.

(11) The student recognizes the methods to process and analyze hair and fibers found in a crime scene. The student is expected to:

(A) demonstrate how to collect hair and fiber evidence at a simulated crime scene;

(B) perform the analysis of hair and fiber evidence using forensic science methods such as microscopy and flame testing;

(C) compare the microscopic characteristics of human hair and non-human hair, including medulla, pigment distribution, and scales;

(D) describe and illustrate the different microscopic characteristics used to determine the origin of a human hair sample; and

(E) differentiate between natural and synthetic fibers.

(12) The student recognizes the methods to process and analyze glass evidence. The student is expected to:

(A) demonstrate how to collect and preserve glass evidence;

(B) compare the composition of various types of glass such as soda lime, borosilicate, leaded, and tempered;

(C) determine the direction of a projectile by examining glass fractures; and

(D) define refractive index and explain how it is used in forensic glass analysis.

(13) The student explores principles of questioned document analysis in the physical and digital form. The student is expected to:

(A) research and explain different types of examinations performed on digital and physical evidence in a forensic laboratory such as digital data recovery, counterfeiting, ink, and paper analysis;

(B) investigate and describe the security features incorporated in U.S. and foreign currency to prevent counterfeiting; and

(C) perform handwriting comparisons of an unknown sample with exemplars by analyzing characteristics such as letter, line, and formatting.

(14) The student evaluates firearms and ballistics evidence. The student is expected to:

(A) describe the mechanism of modern firearms such as long guns and handguns;

(B) identify the components and characteristics of bullet and cartridge cases;

(C) describe the composition of and method of analysis for gunshot residue and primer residue;

(D) conduct and calculate trajectory analysis of bullet strikes within a simulated crime scene; and

(E) identify and recognize the type of information available through the National Integrated Ballistics Information Network.

(15) The student identifies controlled and illicit substances. The student is expected to:

(A) differentiate between toxicological analysis and controlled substance analysis as they relate to the method of collection and impact on the body;

(B) classify controlled substances using the schedules under the Controlled Substances Act; and

(C) identify unknown substances using presumptive and confirmatory procedures such as microchemical/color indicating reagent field tests, microscopy, chromatography, and spectrophotometry.

(16) The student explores toxicology in forensic science. The student is expected to:

(A) explain the absorption, distribution, metabolization, and elimination of toxins such as alcohol, prescription drugs, controlled substances, and carbon monoxide through the human body;

(B) describe presumptive and confirmatory laboratory procedures as they relate to toxicological analysis such as head space analysis, solid-phase extractions, gas chromatography-mass spectrometry (GC/MS), color tests, and immunoassays;

(C) interpret results from presumptive and confirmatory laboratory procedures, including GC/MS and their implications; and

(D) explain the precautions necessary in the forensic laboratory for proper preservation of biological samples.

(17) The student analyzes blood spatter at a simulated crime scene. The student is expected to:

(A) analyze blood stain patterns based on surface type and appearance such as size, shape, distribution and location in order to determine the mechanism by which the patterns are created;

(B) explain the methods of chemically enhancing latent blood patterns using reagents such as Blue Star or Amido Black; and

(C) conduct and interpret blood presumptive tests for various biologicals such as phenolphthalein and tetramethylbenzidine (TMB).

(18) The student analyzes the foundations and methodologies surrounding the processing of biological evidence for the purpose of identification. The student is expected to:

(A) identify different types of biological samples and practice proper collection and preservation techniques;

(B) identify the red blood cell antigens and antibodies as they relate to human blood types;

(C) describe the structure of a deoxyribonucleic acid (DNA) molecule and its function;

(D) explain the analytical procedure for generating a DNA profile, including extraction, quantification, amplification, and capillary electrophoresis;

(E) explain the different methodologies surrounding the different types of DNA analysis such as short tandem repeats (STRs), Y-STRs, mitochondrial DNA, and single nucleotide polymorphisms (SNPs);

(F) interpret the components of an electropherogram; and

(G) explore the databasing systems associated with DNA such as Combined DNA Index System (CODIS) and ancestry-based databasing systems.

(19) The student explores the principles surrounding medicolegal death investigations. The student is expected to:

(A) explain the principles of rigor, algor, and livor mortis and how they apply to deceased persons;

(B) differentiate between the types of wound patterns such as lacerations and blunt force trauma resulting from stabbings, bludgeoning, gunshots, and strangulations;

(C) determine cause and manner of death from an autopsy report obtained through resources such as case studies, simulated autopsies, and dissections; and

(D) determine the approximate time of death using entomology.

(20) The student explores principles of anthropology and odontology relevant to forensic science. The student is expected to:

(A) identify the major bones of the human skeletal system;

(B) compare composition and structure of human and non-human bones;

(C) describe the collection and preservation methods for bone evidence;

(D) explain the characteristics of the human skeletal system indicative of specific biological sex and approximate range of age and height; and

(E) explain how human remains are identified through dental records such as dentures, x-rays, and implants.

§127.800. Practicum in Law, Public Safety, Corrections, and Security (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Law and Public Service Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) The practicum course is designed to give students supervised practical application of previously studied knowledge and skills in law, public safety, corrections, and security. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards as required by business and industry. The student is expected to:

(A) adhere to policies and procedures;

(B) demonstrate positive work behaviors and attitudes such as punctuality, time management, initiative, and cooperation;

(C) accept constructive criticism;

(D) apply ethical reasoning to a variety of situations in order to make ethical decisions;

(E) complete tasks with the highest standards to ensure quality services;

(F) describe professional standards in law, public safety, corrections, and security careers such as dress, grooming, and personal protective equipment as appropriate; and

(G) comply with practicum setting safety such as rules and regulations to maintain safe and healthful working conditions and environments.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem to develop creative and innovative solutions;

(B) critically analyze information to determine its value for the problem-solving task;

(C) compare and contrast alternatives using a variety of critical-thinking skills; and

(D) conduct technical research to gather information necessary for decision making.

(3) The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:

(A) analyze leadership characteristics such as trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation;

(B) demonstrate teamwork skills through working cooperatively with others to achieve tasks;

(C) demonstrate teamwork processes that promote skills such as team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate responsibility for shared group and individual work tasks;

(E) maintain effective working relationships in order to accomplish objectives and tasks;

(F) demonstrate effective working relationships using interpersonal skills;

(G) apply positive interpersonal skills to work cooperatively with others;

(H) demonstrate respect for individuals such as those from different cultures, genders, and backgrounds; and

(I) demonstrate sensitivity to and value for diversity.

(4) The student demonstrates verbal, nonverbal, and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;

(B) employ verbal skills when obtaining and conveying information;

(C) access information sources for occupational tasks using technical materials and informational texts such as Internet websites;

(D) evaluate the reliability of information from technical materials, resources, and informational texts such as Internet websites;

(E) interpret verbal and nonverbal behaviors to enhance communication;

(F) apply active listening skills to obtain and clarify information; and

(G) use academic skills to facilitate effective written and verbal communication such as emails, texting, and written documents.

(5) The student demonstrates technical knowledge and skills required to pursue a career in the Law and Public Service Career Cluster. The student is expected to:

(A) develop advanced technical knowledge and skills related to the student's occupational objective;

(B) evaluate strengths and weaknesses in technical skill proficiency; and

(C) accept critical feedback provided by the supervisor.

(6) The student documents technical knowledge and skills. The student is expected to:

(A) update a professional portfolio reflecting items such as work quality and productivity; technical skills; problem solving; creativity and innovation; communication skills; teamwork and flexibility; initiative and self-direction; accountability and integrity; attendance; licensures or certifications, including awards and scholarships, extended learning experiences, community service, and active participation in career and technical student and professional organizations; abstract of technical competencies mastered during the practicum; updated and current resume; samples of work; and evaluation from the practicum supervisor; and

(B) present the portfolio to interested stakeholders.

§127.801. Extended Practicum in Law, Public Safety, Corrections, and Security (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Law and Public Service Career Cluster. Corequisite: Practicum in Law, Public Safety, Corrections, and Security. This course must be taken concurrently with Practicum in Law, Public Safety, Corrections, and Security and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Extended Practicum in Law, Public Safety, Corrections, and Security is designed to give students supervised practical application of previously studied knowledge and skills in law, public safety, corrections, and security. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(D) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) conduct technical research to gather information necessary for decision making.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in teaching and training. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a supervised law, public safety, corrections, or security experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised law, public safety, corrections, or security experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) examine, understand, and articulate job-specific technical vocabulary;

(D) evaluate strengths and weaknesses in technical skill proficiency; and

(E) collect representative work samples.

§127.802. Practicum in Local, State, and Federal Government (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of courses in the Law and Public Service Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Students in the Practicum in Local, State, and Federal Government will concurrently learn advanced concepts of political science and government workings in the classroom setting and in the workplace. In addition, students will apply technical skills pertaining to government and public administration in a direct mentorship by individuals in professional settings such as government, public management and administration, national security, municipal planning, foreign service, revenue, taxation, and regulation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student analyzes classical and modern political theories. The student is expected to:

(A) review the works of theorists such as Plato, Aristotle, Cicero, Machiavelli, Confucius, Hobbes, Locke, Hegel, and Marx; and

(B) analyze contributions to modern political science from classical theorists such as Polybius, St. Thomas Aquinas, Dante, Bodin, Montesquieu, Kautilya, Ibn Khaldun, Hume, Rousseau, Kant, Smith, Nietzsche, Gandhi, and Keynes.

(2) The student analyzes the U.S. Constitution and constitutional law. The student is expected to:

(A) review basic information related to the U.S. Constitution such as the Articles of Confederation, framers of the Constitution, constitutional conventions, separation of powers, checks and balances, ratification, and the amendment process; and

(B) create a classroom Constitution and Bill of Rights simulating the U.S. Constitution.

(3) The student explores government ethics. The student is expected to formulate a plan for avoiding ethical problems in the future.

(4) The student conducts a project using analytical problem-solving techniques. The student is expected to:

(A) research a problem such as a government and public administration issue, a feasibility study, or a product evaluation;

(B) investigate the issues associated with the problem;

(C) collect primary data such as interviews, surveys, and observations;

(D) express thoughts logically and sequentially in preparing a formal report;

(E) interpret and present quantitative data in graph format within the report;

(F) prepare visuals and handouts to support the presentation; and

(G) make a final presentation of the study to the appropriate stakeholders.

(5) The student documents knowledge and skills attained in the practicum. The student is expected to:

(A) update a professional portfolio to include recognitions, awards, scholarships, a resume, a sample of work, and an evaluation from the practicum supervisor; and

(B) present the portfolio to interested stakeholders.

§127.803. Extended Practicum in Local, State, and Federal Government (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Law and Public Service Career Cluster. Corequisite: Practicum in Local, State, and Federal Government. This course must be taken concurrently with Practicum in Local, State, and Federal Government and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Law and Public Service Career Cluster focuses on planning, managing, and providing legal services, public safety, protective services, and homeland security, including professional and technical support services.

(3) Students in the Extended Practicum in Local, State, and Federal Government will concurrently learn advanced concepts of political science and government workings in the classroom setting and in the workplace. In addition, students will apply technical skills pertaining to government and public administration in a direct mentorship by individuals in professional settings such as government, public management and administration, national security, municipal planning, foreign service, revenue, taxation, and regulation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) create and deliver formal and informal presentations in an effective manner; and

(D) observe and interpret verbal and nonverbal cues and behaviors to enhance communication.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions; and

(B) analyze elements of a problem to develop creative and innovative solutions.

(3) The student understands the professional, ethical, and legal responsibilities in government and public administration. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) show integrity by choosing the ethical course of action when making decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(4) The student conducts a project using analytical problem-solving techniques. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised government or public administration experience;

(B) research a problem, complete a feasibility study, or complete a product evaluation related to a government and public administration issue;

(C) collect primary data such as interviews, surveys, and observations;

(D) interpret and present quantitative data;

(E) evaluate strengths and weaknesses in technical skill proficiency; and

(F) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER O. MANUFACTURING

19 TAC §§127.810 - 127.823, 127.865, 127.866

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.810. Principles of Manufacturing (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Algebra I or Geometry. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) In Principles of Manufacturing, students are introduced to knowledge and skills used in the proper application of principles of manufacturing. The study of manufacturing technology allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities. Students will gain an understanding of what employers require to gain and maintain employment in manufacturing careers.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies manufacturing concepts to specific problems. The student is expected to:

(A) distinguish between disciplines such as engineering, science, manufacturing, and technology;

(B) use tools such as calculators and computers to solve problems; and

(C) use a variety of measuring instruments.

(2) The student applies communication, mathematics, and science knowledge and skills to manufacturing activities. The student is expected to:

(A) demonstrate communication techniques consistent with industry standards;

(B) locate relevant information needed to solve problems;

(C) apply mathematics concepts to solve manufacturing problems;

(D) analyze science principles used to solve problems; and

(E) use the appropriate units of measure.

(3) The student manufactures products using the appropriate tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) analyze the processes needed to complete a project such as initiate, plan, execute, monitor and control, and close; and

(B) use a variety of tools and equipment to produce an item.

(4) The student practices safe work habits. The student is expected to:

(A) master relevant safety tests based on OSHA guidelines and principles; and

(B) use Material Safety Data Sheets (MSDS) to analyze, store, and safely dispose of hazardous materials.

(5) The student describes the importance of maintenance. The student is expected to:

(A) perform maintenance on selected equipment; and

(B) analyze the results of improper maintenance.

(6) The student describes the factors that affect the evolution of technology. The student is expected to:

(A) analyze how changes in technology affect manufacturing practices;

(B) evaluate how the development of technology in manufacturing is influenced by past events;

(C) analyze the international effects of technology;

(D) demonstrate how advancements in technology have affected the field of engineering; and

(E) evaluate the factors that affect the implementation of new ideas.

(7) The student selects and reports on career opportunities, requirements, and expectations in manufacturing and technology. The student is expected to:

(A) investigate an area of interest in manufacturing;

(B) analyze the various specializations in manufacturing; and

(C) describe the functions of engineers, technologists, and technicians.

§127.811. Diversified Manufacturing I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) In Diversified Manufacturing I, students gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how those knowledge and skills are applied to manufacturing. The study of manufacturing systems allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in a manufacturing setting. Diversified Manufacturing I allows students the opportunity to understand the process of mass production by using a wide variety of materials and manufacturing techniques.

Knowledge about career opportunities, requirements, and expectations and the development of skills prepare students for workplace success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the requirements of manufacturing. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers;

(B) interpret engineering drawings, charts, diagrams, and welding symbols; and

(C) select algebraic and geometric principles and formulas required for precision measuring operations.

(2) The student differentiates between the technical concepts that form the knowledge and skills of manufacturing. The student is expected to:

(A) use tools and equipment commonly employed in manufacturing in a safe manner;

(B) demonstrate an understanding of the safety regulations for the different types of manufacturing equipment such as cutting, abrasive, boring, turning, shaping, and forming tools;

(C) execute procedures using the different types of manufacturing equipment such as cutting, abrasive, boring, turning, shaping, and forming tools;

(D) research the modern materials used in manufacturing; and

(E) perform varied measurements, including precision measurements.

(3) The student investigates emerging and innovative applications of technology in engineering. The student is expected to:

(A) report on innovative applications of technology in engineering;

(B) experiment with new technologies; and

(C) experiment with different manufacturing materials such as plastic, composites, fiberglass, stone, and wood.

(4) The student manufactures products or systems using the appropriate tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) analyze the processes needed to complete a project such as initiate, plan, execute, monitor and control, and close; and

(B) use a variety of equipment and machines to produce an item to specification.

(5) The student practices safe work habits. The student is expected to:

(A) master safety tests developed from Occupational Safety and Health Administration regulations;

(B) analyze hazardous materials;

(C) dispose of hazardous materials safely; and

(D) store all materials correctly.

(6) The student participates in a mass manufacturing project. The student is expected to:

(A) participate in the manufacturing of a mass produced project; and

(B) develop a method to check and maintain quality control throughout the manufacturing process.

(7) The student identifies the factors that influence the cost of an item or service. The student is expected to:

(A) develop a budget for a project; and

(B) determine the most effective strategies to minimize costs.

(8) The student describes the relationship between manufacturing and marketing. The student is expected to:

(A) prepare a marketing plan for a product;

(B) analyze the effect of customer satisfaction on the image of a product; and

(C) analyze how customer demands influence the design of an object.

(9) The student applies communication, mathematics, and science knowledge and skills to manufacturing activities. The student is expected to:

(A) demonstrate communication techniques consistent with industry standards;

(B) locate relevant information needed to solve problems;

(C) apply mathematics concepts to solve manufacturing problems;

(D) analyze science principles used to solve problems; and

(E) use appropriate units of measure.

§127.812. Diversified Manufacturing II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Diversified Manufacturing I. Recommended prerequisite: Algebra I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into interme-

diate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) In Diversified Manufacturing II, students will gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how those knowledge and skills are applied to manufacturing. The study of manufacturing systems allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in a manufacturing setting. Diversified Manufacturing II allows students the opportunity to understand the process of mass production by using a wide variety of materials and manufacturing techniques. Knowledge about career opportunities, requirements, and expectations and the development of skills prepare students for workplace success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the requirements of manufacturing. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers;

(B) interpret engineering drawings, charts, diagrams, and welding symbols;

(C) select algebraic and geometric principles and formulas required for precision measuring operations;

(D) develop the information needed to mass produce a simple project such as flow charts, schedules, equipment lists, and material lists; and

(E) explore the use of jigs and fixtures in mass production.

(2) The student differentiates among the technical concepts that form the knowledge and skills of manufacturing. The student is expected to:

(A) use tools and equipment commonly employed in manufacturing in a safe manner;

(B) adhere to safety regulations for the different types of manufacturing equipment such as cutting, abrasive, boring, turning, shaping, and forming tools;

(C) execute procedures using the different types of manufacturing equipment such as cutting, abrasive, boring, turning, shaping, and forming tools;

(D) perform varied measurements, including precision measurements;

(E) design and develop the jigs and fixtures for a simple four (or fewer) part product; and

(F) participate in the production run off of the product.

(3) The student learns skills in production and programming of computer numerical control (CNC) operations. The student is expected to:

(A) develop a CNC program using a computer-aided manufacturing (CAM) program; and

(B) execute the CNC program to machine a product or run a simulation of the program.

(4) The student investigates emerging and innovative applications of technology in manufacturing. The student is expected to:

(A) research innovative technologies in manufacturing; and

(B) experiment with different manufacturing materials such as plastic, composites, fiberglass, stone, and wood.

(5) The student manufactures products or systems using the appropriate tools, equipment, machines, materials, and technical processes. The student is expected to:

(A) analyze engineering properties such as the processes needed to complete a project;

(B) analyze the processes needed to complete a project such as initiate, plan, execute, monitor and control, and close; and

(C) use a variety of tools and equipment to produce a product to specification.

(6) The student practices safe work habits. The student is expected to:

(A) master safety tests based on Occupational Safety and Health Administration regulations;

(B) analyze hazardous materials;

(C) dispose of hazardous materials; and

(D) store all materials safely.

(7) The student participates in the manufacturing of a mass-produced product. The student is expected to:

(A) participate in the manufacturing of products; and

(B) develop a method to check and maintain quality control throughout the manufacturing process.

(8) The student identifies the factors that influence the cost of an item. The student is expected to:

(A) calculate costs associated with production of a mass-produced product; and

(B) re-examine the manufacturing process to maximize efficiency and minimize costs without compromising the integrity and marketability of the product.

(9) The student describes the relationship between manufacturing and marketing. The student is expected to:

(A) prepare a marketing plan for a product;

(B) analyze the effect of customer satisfaction on the image of a product; and

(C) analyze how customer demands influence the design of an object.

(10) The student applies communication, mathematics, and science knowledge and skills to manufacturing activities. The student is expected to:

(A) demonstrate communication techniques consistent with industry standards;

(B) locate relevant information needed to solve problems;

(C) apply mathematics concepts to solve manufacturing problems;

(D) analyze science principles used to solve problems; and

(E) use appropriate units of measure.

§127.813. Manufacturing Engineering Technology I (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) In Manufacturing Engineering Technology I, students will gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how those knowledge and skills are applied to manufacturing. Students will prepare for success in the global economy. The study of manufacturing engineering will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings in a manufacturing setting.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies software skills to manufacturing. The student is expected to:

(A) use computer-aided design (CAD) software to complete a design;

(B) analyze the results of product testing in a simulated modeling environment; and

(C) fabricate a prototype design of a mechanical part.

(2) The student gains skills in writing programmable logic controls so that a robot can work in coordination with a machine. The student is expected to:

(A) use computer-integrated manufacturing techniques to simulate a manufacturing process; and

(B) troubleshoot programmable logic circuit devices.

(3) The student performs functions and solves problems in the electricity and electronics field. The student is expected to:

(A) research the use of control devices; and

(B) demonstrate the use of control devices.

(4) The student learns skills in production and programming of computer numerical control (CNC) operations. The student is expected to:

(A) design a product using computer-aided manufacturing (CAM) software for production on a CNC lathe;

(B) produce a product on the CNC lathe or a simulation;

(C) design a product using CAM software for production on a CNC mill;

(D) produce a product on the CNC mill or a simulation; and

(E) complete data sheets for plan, do, check, and act forms and projects.

(5) The student knows mechanical and fluid systems. The student is expected to:

(A) identify, describe, and demonstrate the use of mechanical devices; and

(B) identify, describe, and demonstrate the use of fluid devices.

(6) The student knows electrical and thermal systems. The student is expected to:

(A) identify and describe electrical devices;

(B) demonstrate the use of electrical devices; and

(C) research the effects of heat energy and temperature on products.

(7) The student understands quality-control systems. The student is expected to:

(A) research and recognize industrial standards such as International Standards Organization and Military Specifications;

(B) explain attribute and Pareto charts; and

(C) apply statistical process control.

§127.814. Manufacturing Engineering Technology II (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Manufacturing Engineering Technology I. Recommended prerequisite: Algebra II, Computer Science I, or Physics. This course satisfies a high school mathematics graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) In Manufacturing Engineering Technology II, students will gain knowledge and skills in the application, design, production, and assessment of products, services, and systems and how those knowledge and skills are applied to manufacturing. The study of Manufacturing Engineering Technology II will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings.

(4) The process standards describe ways in which students are expected to engage in the content. The placement of the process standards at the beginning of the knowledge and skills listed for each grade and course is intentional. The process standards weave the other knowledge and skills together so that students may be successful problem solvers and use mathematics efficiently and effectively in daily life. The process standards are integrated at every grade level and course. When possible, students will apply mathematics to problems arising in everyday life, society, and the workplace. Students will use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution. Students will select appropriate tools such as real objects, manipulatives, paper and pencil, and technology and techniques such as mental math, estimation, and number sense to solve problems. Students will effectively communicate mathematical ideas, reasoning, and their implications using multiple representations such as symbols, diagrams, graphs, and language. Students will use mathematical relationships to generate solutions and make connections and predictions. Students will analyze mathematical relationships to connect and communicate mathematical ideas. Students will display, explain, or justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(5) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(6) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student uses mathematical processes to acquire and demonstrate mathematical understanding. The student is expected to:

(A) apply mathematics to problems arising in everyday life, society, and the workplace;

(B) use a problem-solving model that incorporates analyzing given information, formulating a plan or strategy, determining a solution, justifying the solution, and evaluating the problem-solving process and the reasonableness of the solution;

(C) select tools, including real objects, manipulatives, paper and pencil, and technology as appropriate, and techniques, including mental math, estimation, and number sense as appropriate, to solve problems;

(D) communicate mathematical ideas, reasoning, and their implications using multiple representations, including symbols, diagrams, graphs, and language as appropriate;

(E) create and use representations to organize, record, and communicate mathematical ideas;

(F) analyze mathematical relationships to connect and communicate mathematical ideas; and

(G) display, explain, and justify mathematical ideas and arguments using precise mathematical language in written or oral communication.

(2) The student applies design skills to manufacturing. The student is expected to:

(A) use computer-aided design (CAD) software to complete a design;

(B) analyze the results of product testing in a simulated modeling environment;

(C) fabricate a prototype design of a mechanical part; and

(D) use computer-integrated manufacturing techniques to simulate a manufacturing process.

(3) The student performs functions and solves problems in the electricity and electronics field. The student is expected to:

(A) develop solutions to use control devices; and

(B) troubleshoot control devices such as programmable logic circuit devices.

(4) The student learns skills in production and programming of computer numerical control (CNC) operations. The student is expected to:

(A) design a project using computer-aided manufacturing (CAM) software for a CNC lathe;

(B) produce a product on a CNC lathe or simulator;

(C) design a project using CAM software for a CNC mill;

(D) produce a product on a CNC mill or simulator; and

(E) complete data sheets for plan, do, check, and act forms and projects.

(5) The student demonstrates an understanding of mechanical and fluid systems. The student is expected to:

(A) use mechanical devices;

(B) use pneumatics devices; and

(C) use hydraulics devices.

(6) The student demonstrates an understanding of electrical and thermal systems. The student is expected to:

(A) use electrical controls;

(B) analyze the effects of heat energy and temperature on products; and

(C) develop an understanding of ventilation such as heating, air conditioning, and refrigeration.

(7) The student analyzes quality-control systems. The student is expected to:

(A) apply statistical process control;

(B) determine hardness values of different materials; and

(C) analyze attribute and Pareto charts.

(8) The student develops a system using electrical controls and pneumatics or hydraulics devices. The student is expected to:

(A) design a system that incorporates electrical controls and either a pneumatic or hydraulic device;

(B) build a system that incorporates electrical controls and either a pneumatic or hydraulic device; and

(C) test and troubleshoot the system that incorporates electrical controls and either a pneumatic or hydraulic device.

§127.815. Metal Fabrication and Machining I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Algebra I or Geometry. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Metal Fabrication and Machining I provides the knowledge, skills, and certifications required for equal employment opportunities in the metal production industry. Students must have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies academic skills to the requirements of metal manufacturing. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from varied cultures, including fellow workers, management, and customers;

(B) interpret engineering drawings, charts, diagrams, and welding symbols; and

(C) select algebraic and geometric principles and formulas required for precision measuring operations.

(2) The student differentiates the technical concepts that form the knowledge and skills of metal manufacturing. The student is expected to:

(A) analyze the resources found in The Machinery's Handbook as well as the specifications and codes written by the American Welding Society (AWS), Canadian Welding Bureau (CWB), American National Standards Institute (ANSI), and American Petroleum Institute (API);

(B) examine the theory of shielded metal arc welding and gas metal arc welding;

(C) examine the sheet metal industry; and

(D) examine the nomenclature of abrasive wheels.

(3) The student differentiates the function and application of the tools, equipment, technologies, and materials used in metal manufacturing. The student is expected to:

(A) use hand and power tools and equipment commonly employed in metal manufacturing; and

(B) dispose of environmentally hazardous materials used in metal manufacturing.

(4) The student applies the technical concepts and skills of the machining industry to simulated and actual work situations. The student is expected to:

(A) use various work mounting procedures on all appropriate machines;

(B) operate machine tools such as drill press, lathe, saw, grinders, and milling machines;

(C) execute lathe procedures such as cutting threads, turning tapers, drilling, reaming, polishing, knurling, and boring; and

(D) execute milling procedures such as milling flat surfaces, bevels, chamfers, grooves, and key-way seats needed to machine precision pieces.

(5) The student applies the technical concepts and skills of the welding industry to simulated and actual work situations. The student is expected to:

(A) perform cutting processes such as straight cuts, bevel cuts, and hole piercing with oxy-fuel and plasma;

(B) use the common types of electrodes with the shield metal arc welding process;

(C) practice using gas metal arc welding to weld in multiple positions to produce groove and fillet welds; and

(D) inspect groove and fillet welds to AWS, CWB, ANSI, and API codes.

(6) The student applies the technical concepts and skills of the sheet metal industry to simulate actual work situations. The student is expected to:

(A) use mathematics in precision measuring operations; and

(B) interpret, engineering drawings, charts, and diagrams as related to the sheet metal industry.

(7) The student differentiates the concepts that form the technical knowledge and skills of sheet metal manufacturing. The student is expected to:

(A) analyze the types, sizes, and properties of sheet metal materials;

(B) analyze the fundamentals of oxy-fuel processes as related to sheet metal; and

(C) analyze the fundamentals of shielded metal arc welding and gas metal arc welding as related to sheet metal under various AWS codes.

(8) The student understands the function and application of the tools, equipment, technologies, and materials used in sheet metal manufacturing. The student is expected to:

(A) practice safe use of equipment; and

(B) dispose of hazardous materials used in sheet metal manufacturing.

(9) The student applies the knowledge and skills of sheet metal manufacturing in simulated and actual work situations. The student is expected to:

(A) draw simple metal layouts; and

(B) construct common sheet metal seams.

§127.816. Metal Fabrication and Machining II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Metal Fabrication and Machining I. Recommended prerequisites: Geometry and Algebra II. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Metal Fabrication and Machining II builds on the knowledge, skills, and certifications students acquire in Metal Fabrication and Machining I. Students will develop advanced concepts and skills as related to personal and career development. This course integrates academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student describes the importance of teamwork, leadership, integrity, honesty, work habits, and organizational skills. The student is expected to:

(A) use teamwork to solve problems;

(B) distinguish among team roles such as team leaders and team members;

(C) discuss Equal Employment Opportunity law in the workplace; and

(D) use time-management techniques to develop work schedules.

(2) The student applies advanced academic skills to the requirements of metal fabrication and machining. The student is expected to:

(A) demonstrate effective communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) successfully complete work orders;

(C) estimate labor costs using various algebraic formulas;

(D) interpret advanced engineering drawings, charts, diagrams, and welding symbols; and

(E) demonstrate calculation of precision measuring operations using algebra, geometry, and trigonometry.

(3) The student knows the advanced concepts that form the technical knowledge and skills of metal fabrication and machining. The student is expected to:

(A) analyze the resources found in various manufacturing reference materials;

(B) demonstrate knowledge of the various welding processes;

(C) examine the sheet metal industry; and

(D) examine the advanced use of abrasives.

(4) The student knows the function and application of the tools, equipment, technologies, and materials used in metal fabrication and machining. The student is expected to:

(A) operate various welding machines, cutting equipment, and grinding equipment commonly employed in metal fabrication;

(B) demonstrate knowledge of computer numerical control (CNC) machines;

(C) demonstrate knowledge of the concepts of automated welding machines;

(D) demonstrate knowledge of emerging technologies that may affect metal manufacturing; and

(E) dispose of environmentally hazardous materials associated with and used in metal fabrication manufacturing.

(5) The student applies the advanced concepts and technical knowledge and skills of the machining industry to simulated and actual work situations. The student is expected to:

(A) use various work mounting procedures on appropriate machines;

(B) examine the cutting operations such as drill press, lathe, saw, grinders, and milling machines;

(C) execute lathe procedures such as cut threads, turn tapers, drills, reams, polishes, knurls, and bores;

(D) mill flat surfaces, bevels, chamfers, grooves, and key-seats; and

(E) machine precision pieces.

(6) The student applies the advanced concepts and technical knowledge and skills of the welding industry to simulated and actual work situations. The student is expected to:

(A) demonstrate cutting processes such as oxy-fuel and plasma;

(B) demonstrate the use of the common types of electrodes using the shielded metal arc welding process;

(C) use shielded metal arc welding, gas metal arc welding, and gas tungsten arc welding to weld fillet and groove welds using various positions; and

(D) inspect welds to the American Welding Society (AWS), Canadian Welding Bureau (CWB), American National Standards Institute (ANSI), and American Petroleum Institute (API) codes.

(7) The student applies the advanced concepts and technical knowledge and skills of the sheet metal industry to simulated and actual work situations. The student is expected to:

(A) estimate labor costs;

(B) use advanced mathematics in precision measuring operations; and

(C) interpret industrial standard blueprints, drawings, charts, and diagrams.

(8) The student knows the advanced concepts and technical knowledge and skills of sheet metal manufacturing. The student is expected to:

(A) analyze properties of sheet metal materials and fasteners;

(B) analyze oxy-fuel processes as related to sheet metal; and

(C) demonstrate knowledge of shielded metal arc welding, gas metal arc welding, and gas tungsten arc welding as related to sheet metal under AWS code.

(9) The student knows the function and application of the tools, equipment, technologies, and materials used in sheet metal. The student is expected to:

(A) use equipment commonly employed in sheet metal safely;

(B) dispose of environmentally hazardous materials used in sheet metal manufacturing properly; and

(C) demonstrate knowledge of emerging technologies that may affect sheet metal.

(10) The student applies the advanced concepts and technical skills in simulated and actual work situations. The student is expected to:

(A) draw advanced sheet metal layouts;

(B) construct sheet metal seams;

(C) construct transitions and offsets;

(D) use the gas tungsten arc welding process in sheet metal construction;

(E) apply the principles of sheet metal construction to the fabrication of various sheet metal products; and

(F) apply skills in sheet metal to career preparation learning experiences.

§127.817. Precision Metal Manufacturing I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Manufacturing and completion of or concurrent enrollment in Algebra I or Geometry. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Precision Metal Manufacturing I will provide the knowledge, skills, and technologies required for employment in precision machining. While the course is designed to provide necessary skills in machining, it also provides a real-world foundation for any engineering discipline. This course may address a variety of materials such as plastics, ceramics, and wood in addition to metal. Students will develop knowledge of the concepts and skills related to precision metal manufacturing to apply them to personal and career development. This course supports integration of academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and

transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. This course is designed to provide entry-level employment for the student or articulated credit integration into a community college and dual credit with a community college with completion of the advanced course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) determine academic knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the professional standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation;

(D) evaluate personal career goals;

(E) communicate effectively with others in the workplace to clarify objectives; and

(F) demonstrate skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(2) The student applies advanced academic skills to the requirements of precision metal manufacturing. The student is expected to:

(A) demonstrate technical writing skills related to writing requirements found in manufacturing;

(B) demonstrate mathematical skills such as algebra, geometry, trigonometry, statics, and conversion as applied to machining;

(C) interpret engineering drawings, including drawings using geometric dimensioning and tolerancing;

(D) describe orthographic and isometric views of three-dimensional figures;

(E) evaluate mathematics as it applies to precision machining operations; and

(F) discuss basic concepts of physics as applied to machining.

(3) The student recognizes the concepts and skills that form the technical knowledge required in precision machining. The student is expected to:

(A) examine the resources found in recognized manufacturing reference materials such as The Machinery's Handbook; and

(B) demonstrate knowledge of the uses of reference charts such as tap drill charts, drill size charts, and feed-speed charts.

(4) The student evaluates the function and application of the tools, equipment, technologies, and materials used in precision machining. The student is expected to:

(A) practice safety while running equipment commonly employed in machine shops;

(B) identify and properly dispose of environmentally hazardous materials used in machine shops;

(C) demonstrate knowledge of computer numerical control (CNC) operations;

(D) demonstrate knowledge of emerging technologies that may affect the machine shop;

(E) demonstrate knowledge of heating metals such as hardening, tempering, annealing, normalizing, and case hardening steel;

(F) apply technical knowledge and skills in a machine shop to career preparation experiences;

(G) identify basic metallic and non-metallic materials; and

(H) compare various abrasives for type, structure, bond, and use.

(5) The student employs skills necessary to perform bench work and layout. The student is expected to:

(A) use equipment commonly employed in bench work and layout in a safe manner;

(B) develop the ability to use a file to cut flats, angles, and radiuses;

(C) employ standard layout tools to transfer a part design to the actual part;

(D) perform center punching and hand drilling of holes using an electric or air hand drill;

(E) perform hand tapping of holes;

(F) perform hand reaming of holes using an electric or air hand drill;

(G) develop a detailed layout part such as the National Institute for Metalworking Skills (NIMS) Level 1 layout part;

(H) develop a detailed bench work part such as the NIMS Level 1 bench work part; and

(I) employ basic housekeeping skills as applied to a machine shop.

(6) The student employs skills necessary to perform precision measurement. The student is expected to:

(A) use equipment commonly used during precision measurement in a safe manner;

(B) write an inspection plan;

(C) identify and select the required measuring instrument(s) to conduct the required inspection procedure(s); and

(D) describe statistical process control.

(7) The student employs skills necessary to perform manual lathe work. The student is expected to:

(A) use equipment such as accessories commonly implemented on and around a lathe in a safe manner;

(B) analyze the advantages and disadvantages between a four-jaw independent chuck, a three-jaw universal chuck, and a collet workholding system;

(C) indicate a part in a four-jaw independent chuck within.003" total indicated runout (TIR) using a standard indicator;

(D) identify and describe the function of the components of a lathe;

(E) identify and use most accessories and tooling for turning operations;

(F) demonstrate the standard turning operations of boring, chamfering, cutting tapers, drilling, facing, grooving, knurling, polishing, threading, and turning on a manual lathe;

(G) write a detailed process plan for turning, including appropriate processes such as feeds, speeds, tool selection, and sequencing;

(H) develop a detailed turning part such as the NIMS Level 1 turning, chucking or turning between centers part; and

(I) employ basic preventative maintenance on the lathe.

(8) The student employs skills necessary to perform manual milling work. The student is expected to:

(A) use equipment commonly used with a milling machine in a safe manner;

(B) analyze the advantages and disadvantages of various work holding methods such as using a vise, clamping to a table, and clamping to an angle plate;

(C) contrast the various ancillary tools used on milling machines such as a rotary table, indexing head, and super spacer;

(D) identify or describe the function of the components of a milling machine;

(E) tram in the head of a vertical milling machine;

(F) locate and set a work piece in a milling vise employing a dial indicator;

(G) develop a square block in the milling machine to close tolerances;

(H) demonstrate various hole-making activities such as spot drilling, drilling, reaming, tapping, countersinking, and boring on the milling machine;

(I) demonstrate various milling activities such as climb milling, conventional milling, slotting, grooving, cutting angles, and chamfering;

(J) write a detailed process plan, including appropriate feeds, speeds, tool selection, work holding methods, and sequencing for milling;

(K) develop a detailed milling part such as the NIMS Level 1 milling part; and

(L) employ basic preventative maintenance on the milling machine.

(9) The student employs skills necessary to perform work on various support equipment commonly found in a machine shop. The student is expected to:

(A) use various support equipment commonly found in a machine shop in a safe manner;

(B) understand basic pedestal grinder functions such as wheel selection criteria and requirements;

(C) understand basic sawing functions such as band type, speed, and feeds for various types of material;

(D) understand basic drill press operations, including work holding, appropriate speeds, and feeds; and

(E) use proper safety procedures for surface grinding operations.

§127.818. Precision Metal Manufacturing II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Precision Metal Manufacturing I. Recommended corequisite: Precision Metal Manufacturing II Lab. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Precision Metal Manufacturing II will provide students the knowledge, skills, and technologies required for employment in precision machining. While this course is designed to provide necessary skills in machining, it also provides a real-world foundation for any engineering discipline. This course addresses a variety of materials such as plastics, ceramics, and wood in addition to metal. Students will develop knowledge of the concepts and skills related to these systems to apply them to personal and career development. This course supports integration of academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. This course is designed to provide entry-level employment for the student or articulated credit integration into a community college and dual credit with a community college with completion of the advanced course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) determine academic knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation;

(D) evaluate progress toward personal career goals;

(E) communicate effectively with others in the workplace to clarify objectives; and

(F) demonstrate skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(2) The student applies the technical knowledge and skills of advanced precision metal manufacturing. The student is expected to:

(A) apply the technical aspects found in The Machinery's Handbook resource; and

(B) select appropriate resources from the Internet as applied to manufacturing.

(3) The student builds on the manual machining skills gained in Precision Metal Manufacturing I. The student is expected to:

(A) develop a detailed turning part such as the National Institute for Metalworking Skills (NIMS) Level 1 turning, chucking, or turning between centers part with zero defects (100% to the print) in a safe manner; and

(B) develop a detailed milling part such as the NIMS Level 1 milling part with zero defects (100% to the print) in a safe manner.

(4) The student learns about standard computer numerical control (CNC) machinery. The student is expected to:

(A) research the history of numerical control machines;

(B) distinguish among different types of CNC machines used in the industry;

(C) demonstrate safety rules for CNC operation;

(D) demonstrate the methods by which programs can be entered into a controller; and

(E) use appropriate machining terminology to enhance CNC vocabulary.

(5) The student appraises various CNC systems to differentiate the development and implementation of those systems. The student is expected to:

(A) examine the types of drive motors used on CNC machinery;

(B) explain the Cartesian coordinate system;

(C) differentiate between absolute and incremental positioning; and

(D) illustrate the difference between datum and delta dimensioning.

(6) The student learns the process planning and tool selection within a CNC lab environment. The student is expected to:

(A) develop a detailed process plan, including proper tool selection, feeds, and speeds, for the material being cut and finish specifications on the engineering drawing, logical sequence of operations, and appropriate inspection points;

(B) develop a logical sequence of operations and appropriate inspection points;

(C) demonstrate use of carbide inserts; and

(D) apply various carbide inserts by determining the correct type, grade, style, feed, and speed for the most common materials machined in a basic machine shop.

(7) The student evaluates tool changing and tool offset registers in the CNC lab environment. The student is expected to:

(A) perform various types of tool changes;

(B) demonstrate quick change tooling used on CNC milling machines;

(C) demonstrate appropriate tool storage;

(D) demonstrate the proper use of tool offset registers;

(E) determine tool offset length; and

(F) incorporate tool offsets for a set up.

(8) The student operates a CNC lathe. The student is expected to:

(A) use equipment commonly associated with a CNC lathe in a safe manner;

(B) recognize, name, and describe the function of the primary components of a CNC lathe;

(C) perform preventative maintenance checks on a CNC lathe such as checking all fluid levels, system pressure, tooling wear, and component lubrication and cleaning;

(D) test the coolant for proper density and adjust accordingly in order to reach the correct mixture;

(E) perform a power up on a standard CNC lathe;

(F) demonstrate the use of the jog controls on the operator panel to jog the lathe's axes;

(G) demonstrate the ability to locate, assemble, and measure tooling according to work instructions and job documentation;

(H) install tools and tool holders in the automatic tool changer locations according to work instructions and job documentation;

(I) locate and set workpiece to zero on a CNC lathe;

(J) set any required work offsets for the part to be machined after a basic tool setting process has been completed;

(K) set the proper geometry/tool offsets for each tool in a standard tool setting process;

(L) operate a CNC lathe in automatic mode; and

(M) illustrate the proper power down process on a CNC lathe.

(9) The student operates a CNC mill. The student is expected to:

(A) use equipment commonly found on and around a CNC mill in a safe manner;

(B) recognize, name, and describe the function of the primary components of a CNC mill;

(C) perform preventative maintenance checks on a CNC mill such as checking all fluid levels, system pressure, tooling wear, and component lubrication and cleaning;

(D) test the coolant for proper density and adjust accordingly in order to reach the correct mixture;

(E) perform a power up on a standard CNC mill;

(F) demonstrate the use of the jog controls on the operator panel to jog the mill's axes;

(G) demonstrate the ability to locate, assemble, and measure tooling using a presetter or other means according to work instructions and job documentation;

(H) install tools and tool holders in the automatic tool changer locations according to work instructions and job documentation;

(I) locate and set workpiece to zero on a CNC mill;

(J) set any required work offsets for the part to be machined after a basic tool setting process has been completed;

(K) set the proper geometry/tool offsets for each tool in a standard tool-setting process;

(L) operate a CNC mill in automatic mode; and

(M) illustrate the proper power down process on a CNC mill.

(10) The student learns to manually program a CNC lathe without the help of computer-aided design or manufacturing (CAD/CAM) software. The student is expected to:

(A) calculate trigonometry to determine coordinates from technical drawings to cut arcs and angles;

(B) use trigonometry for determining cutter offsets;

(C) use appropriate mathematical skills to solve problems while programming a CNC lathe;

(D) write a simple program to face and turn;

(E) write a simple program to cut radiuses, angles, grooves, and threads;

(F) write a program using cutter radius compensation;

(G) write a program using canned cycles such as G71; and

(H) write a program and produce a complex part such as a NIMS Level 1 CNC lathe part with zero defects.

(11) The student learns to manually program a CNC mill (without the help of CAD/CAM software). The student is expected to:

(A) use trigonometry to determine coordinates from technical drawings to cut arcs and angles;

(B) use trigonometry for determining cutter offsets;

(C) use appropriate mathematical skills to solve problems while programming a CNC lathe;

(D) write a simple program to perform hole operations;

(E) write a simple program to cut radiuses and angles;

(F) write a program using cutter radius compensation and ramping; and

(G) write a program and produce a complex part such as a NIMS Level 1 CNC milling part with zero defects.

(12) The student develops a deeper understanding of quality control. The student is expected to:

(A) evaluate engineering drawings using geometric dimensioning and tolerancing;

(B) discuss the American Society of Mechanical Engineers (ASME) Y14.5M standard that defines geometric dimensioning and tolerancing; and

(C) appraise various quality control/management programs.

§127.819. Precision Metal Manufacturing II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This lab course is recommended for students in Grades 11 and 12. Prerequisite: Precision Metal Manufacturing I. Corequisite: Precision Metal Manufacturing II. This course must be taken concurrently with Precision Metal Manufacturing II and may not be taken as a stand-alone course. Districts are encouraged to offer this lab in a consecutive block with Precision Metal Manufacturing II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Precision Metal Manufacturing II Lab provides the knowledge, skills, and technologies required for employment in precision machining. While Precision Metal Manufacturing II Lab is designed to provide necessary skills in machining, it also provides a real-world foundation for any engineering discipline. This course may address a variety of materials such as plastics, ceramics, and wood in addition to metal. Students will develop knowledge of the concepts and skills related to these systems to apply them to personal and career development. This course supports integration of academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for success. This course is designed to provide entry-level employment for the student or articulated credit integration

into a community college and dual credit with a community college with completion of the advanced course.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) express ideas to others in a clear, concise, and effective manner through written and verbal communication;

(B) convey written information that is easily understandable to others;

(C) demonstrate acceptable work ethics in reporting for duty and performing assigned tasks as directed;

(D) conduct oneself in a manner acceptable for the profession and work site such as suitable dress and polite speech;

(E) choose the ethical course of action and comply with all applicable rules, laws, and regulations;

(F) review with a critical eye the fine, detailed aspects of both quantitative and qualitative work processes and end products;

(G) evaluate systems and operations; identify causes, problems, patterns, or issues; and explore workable solutions or remedies to improve situations;

(H) follow written and oral instructions and adhere to established business practices, policies, and procedures, including health and safety rules; and

(I) prioritize tasks, follow schedules, and work on goal-relevant activities in a way that uses time wisely in an effective, efficient manner.

(2) The student builds on the manual machining skills gained in Precision Metal Manufacturing I. The student is expected to:

(A) develop a detailed turning part such as the National Institute for Metalworking Skills (NIMS) Level 1 turning, chucking, or turning between centers part with zero defects (100% to the print) in a safe manner; and

(B) develop a detailed milling part such as the NIMS Level 1 milling part with zero defects (100% to the print) in a safe manner.

(3) The student evaluates tool changing and tool offset registers in a computer numerical control (CNC) lab environment. The student is expected to:

(A) perform various types of tool changes;

(B) demonstrate quick change tooling used on CNC milling machines;

(C) demonstrate appropriate tool storage;

(D) demonstrate the proper use of tool offset registers;

(E) determine tool offset length; and

(F) enter tool offsets for a set up.

(4) The student operates a CNC lathe. The student is expected to:

(A) use equipment commonly found on and around a CNC lathe in a safe manner;

(B) recognize, name, and describe the function of the primary components of a CNC lathe;

(C) perform preventative maintenance checks on a CNC lathe such as checking all fluid levels, system pressure, tooling wear, and component lubrication and cleaning;

(D) test the coolant for proper density and adjust accordingly in order to reach the correct mixture;

(E) perform a power up on a standard CNC lathe;

(F) demonstrate the use of the jog controls on the operator panel to jog the lathe's axes;

(G) demonstrate the ability to locate, assemble, and measure tooling according to work instructions and job documentation;

(H) install tools and tool holders in the automatic tool changer locations according to work instructions and job documentation;

(I) locate and set workpiece to zero on a CNC lathe;

(J) set any required work offsets for the part to be machined after a basic tool setting process has been completed;

(K) set the proper geometry/tool offsets for each tool in a standard tool setting process;

(L) operate a CNC lathe in automatic mode; and

(M) illustrate the proper power down process on a CNC lathe.

(5) The student operates a CNC mill. The student is expected to:

(A) use equipment commonly found on and around a CNC mill in a safe manner;

(B) recognize, name, and describe the function of the primary components of a CNC mill;

(C) perform preventative maintenance checks on a CNC mill such as checking all fluid levels, system pressure, tooling wear, and component lubrication and cleaning;

(D) test the coolant for proper density and adjust accordingly in order to reach the correct mixture;

(E) perform a power up on a standard CNC mill;

(F) demonstrate the use of the jog controls on the operator panel to jog the mill's axes;

(G) demonstrate the ability to locate, assemble, and measure tooling using a presetter or other means according to work instructions and job documentation;

(H) install tools and tool holders in the automatic tool changer locations according to work instructions and job documentation;

(I) locate and set workpiece to zero on a CNC mill;

(J) set any required work offsets for the part to be machined after a basic tool setting process has been completed;

(K) set the proper geometry/tool offsets for each tool in a standard tool setting process;

(L) operate a CNC mill in automatic mode; and

(M) illustrate the proper power down process on a CNC mill.

(6) The student learns to manually program a CNC lathe without the help of computer-aided design or manufacturing (CAD/CAM) software. The student is expected to:

(A) use trigonometry to determine coordinates from technical drawings to cut arcs and angles;

(B) use trigonometry for determining cutter offsets;

(C) use appropriate mathematical skills to solve problems while programming a CNC lathe;

(D) write a simple program to face and turn;

(E) write a simple program to cut radiuses, angles, grooves, and threads;

(F) write a program using cutter radius compensation;

(G) write a program using canned cycles such as G71; and

(H) write a program and produce a complex part such as a NIMS Level 1 CNC lathe part with zero defects.

(7) The student learns to manually program a CNC mill (without the help of CAD/CAM software). The student is expected to:

(A) use trigonometry to determine coordinates from technical drawings to cut arcs and angles;

(B) use trigonometry to determine cutter offsets;

(C) use appropriate mathematical skills to solve problems while programming a CNC lathe;

(D) write a simple program to perform hole operations;

(E) write a simple program to cut radiuses and angles;

(F) write a program using cutter radius compensation and ramping; and

(G) write a program and produce a complex part such as a NIMS Level 1 CNC milling part with zero defects.

§127.820. Introduction to Welding (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite or corequisite: Algebra I. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Introduction to Welding will provide an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Students will be introduced to the three basic welding processes. Topics include: industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. Introduction to Welding will provide students with the knowledge, skills, and technologies required for employment in welding industries. Students will develop knowledge and skills related to welding and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills will prepare students for future success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the characteristics of a successful worker in the global economy. The student is expected to:

(A) determine academic knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the professional standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation;

(D) evaluate progress toward personal career goals;

(E) communicate effectively with others in the workplace to clarify objectives; and

(F) apply knowledge and skills to health and safety in the workplace as specified by appropriate governmental regulations.

(2) The student evaluates the function and application of the tools, equipment, technologies, and materials used in welding. The student is expected to:

(A) employ welding equipment according to safety standards;

(B) identify and properly dispose of environmentally hazardous materials used in welding;

(C) explain the importance of recycling materials used in welding;

(D) choose appropriate personal protective equipment; and

(E) evaluate skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(3) The student compares and contrasts welding joint design, material symbols, and welds. The student is expected to:

(A) demonstrate knowledge of welding sketches; and

(B) identify types of welds such as fillet, groove, spot, plug, and flanged.

(4) The student applies academic skills in relationship to welding. The student is expected to:

(A) demonstrate mathematical skills related to welding;

(B) demonstrate technical writing skills related to welding;

(C) apply accurate readings of measuring devices;

(D) accurately use appropriate tools to make measurements;

(E) solve problems using whole numbers, fractions, mixed numbers, and decimals;

(F) perform conversions between fractions and decimals; and

(G) perform conversions between standard units and metric units.

(5) The student applies the concepts and skills of welding projects. The student is expected to:

(A) explore careers in welding;

(B) understand welding codes such as American Petroleum Institute (API) 1104 and American Welding Society (AWS) D1.1;

(C) work independently to fabricate a variety of welded projects with minimal assistance; and

(D) work collaboratively with other students.

(6) The student performs oxy-fuel cutting processes on carbon steels. The student is expected to:

(A) use safe operating practices;

(B) perform safe handling of compressed gases;

(C) identify components of oxy-fuel gas cutting;

(D) demonstrate proper set-up procedures for the oxy-fuel process;

(E) identify the factors affecting the oxy-fuel cutting of base metals; and

(F) demonstrate proper cutting techniques such as piercing, straight line, and bevel;

(7) The student performs shielded metal arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate knowledge of welding currents;

(C) apply shielded metal arc welding principles;

(D) demonstrate proper set-up procedure for shielded metal arc welding;

(E) determine appropriate electrodes for base metal in shielded metal arc welding;

(F) perform fillet and groove welds in all positions; and

(G) prepare joints for welding.

(8) The student performs gas metal arc welding principles and practices. The student is expected to:

(A) use safe operating practices;

(B) apply gas metal arc welding principles;

(C) demonstrate proper set-up procedure for gas metal arc welding;

(D) use appropriate equipment setup for base metal in gas metal arc welding; and

(E) perform fillet and groove welds using gas metal arc welding with various metal transfer processes.

§127.821. Welding I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisites: Algebra I, Principles of Manufacturing, Introduction to Precision Metal Manufacturing, or Introduction to Welding. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Welding I provides the knowledge, skills, and technologies required for employment in metal technology systems. Students will develop knowledge and skills related to this system and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career opportunities, requirements, and expectations and the development of workplace skills prepare students for future success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) explore academic knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the professional standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation;

(D) evaluate personal career goals;

(E) communicate effectively with others in the workplace to clarify objectives; and

(F) demonstrate skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(2) The student applies academic skills to the requirements of welding. The student is expected to:

(A) demonstrate effective communication skills with individuals from varied cultures such as fellow workers, management, and customers;

(B) demonstrate mathematical skills to estimate costs;

(C) demonstrate technical writing skills related to work orders;

(D) apply accurate readings of measuring devices;

(E) use appropriate tools to make accurate measurements;

(F) compute measurements such as area, surface area, volume, and perimeter;

(G) solve problems using whole numbers, fractions, mixed numbers, and decimals;

(H) use various methods, including a calculator, to perform computations;

(I) perform conversions between fractions and decimals;

(J) perform conversions between standards units and metric units;

(K) calculate and apply the functions of angles such as using the Pythagorean Theorem; and

(L) diagram the parts of a circle.

(3) The student evaluates the function and application of the tools, equipment, technologies, and materials used in welding. The student is expected to:

(A) operate welding equipment according to safety standards;

(B) identify and properly dispose of environmentally hazardous materials used in welding;

(C) explain the importance of recycling materials used in welding;

(D) choose appropriate personal protective equipment; and

(E) evaluate skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(4) The student understands welding joint design, symbols, and welds. The student is expected to:

(A) demonstrate knowledge of engineering drawings, charts, and diagrams;

(B) interpret orthographic and isometric views of three-dimensional figures;

(C) interpret engineering, drawings, charts, and diagrams;

(D) analyze components of the welding symbol;

(E) identify types of welding joints;

(F) identify positions of welding; and

(G) identify types of welds such as fillet, groove, spot, plug, and flanged.

(5) The student analyzes the concepts and intricacies of inspections and related codes. The student is expected to:

(A) explain weld inspection processes; and

(B) interpret welding codes.

(6) The student analyzes oxy-fuel cutting processes on carbon steels. The student is expected to:

(A) practice safe operating practices;

(B) perform safe handling of compressed gases;

(C) identify components of oxy-fuel gas cutting system;

(D) demonstrate proper set-up procedures for oxy-fuel cutting process;

(E) identify factors affecting oxy-fuel cutting of base metals;

(F) demonstrate proper cutting techniques such as piercing, straight line, and bevel;

(G) identify acceptable cuts; and

(H) evaluate alternative fuel gasses such as propane, propylene, and Chemtane 2Â®.

(7) The student analyzes plasma arc cutting on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate knowledge of the theories of plasma arc cutting;

(C) apply safe handling of compressed air supply;

(D) identify components of plasma arc cutting;

(E) demonstrate correct set-up procedure for plasma arc cutting;

(F) define cutting terms; and

(G) perform straight line, piercing, bevels, and shape cuts.

(8) The student analyzes shielded metal arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) analyze welding current relationships such as alternating current and direct current, heat transfer, and polarity;

(C) apply shielded metal arc welding principles;

(D) demonstrate proper set-up procedure for shielded metal arc welding;

(E) explain the American Welding Society (AWS) identification system for shielded metal arc welding electrodes;

(F) determine appropriate electrodes for base metal in shielded metal arc welding; and

(G) perform multi-pass groove welds in all positions according to industry-accepted welding standards.

(9) The student analyzes gas metal arc welding principles and practices. The student is expected to:

(A) use safe operating practices;

(B) explain the effects that weld angle, work angle, and electrode extension have on welds;

(C) apply gas metal arc welding principles;

(D) demonstrate proper set-up procedure for gas metal arc welding;

(E) explain the AWS identification system for gas metal arc welding filler metal;

(F) determine appropriate filler metal for base metal in gas metal arc welding; and

(G) perform fillet and groove welds in all positions.

(10) The student analyzes flux cored arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) explain the effects that weld angle, work angle, and electrode extension have on welds;

(C) apply flux cored arc welding principles;

(D) demonstrate proper set-up procedure for flux cored arc welding;

(E) explain the AWS identification system for flux cored arc welding electrodes;

(F) determine appropriate filler metal for base metal in flux cored arc welding; and

(G) perform fillet and groove welds in all positions.

(11) The student analyzes gas tungsten arc welding on metals. The student is expected to:

(A) use safe operating practices;

(B) analyze electrical welding current relationships such as alternating current and direct current, heat transfer, and polarity;

(C) identify the common types of tungsten and filler metals according to the AWS identification system;

(D) demonstrate proper set-up procedure for gas tungsten arc welding;

(E) perform fillet and groove welds in all positions; and

(F) perform welds on metals such as carbon steel, stainless steel, and aluminum.

§127.822. Welding II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Welding I. Recommended prerequisites: Algebra I or Geometry. Recommended corequisite: Welding II Lab. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Welding II builds on the knowledge and skills developed in Welding I. Students will develop advanced welding concepts and skills as related to personal and career development. Students will integrate academic and technical knowledge and skills. Students will have opportunities to reinforce, apply, and transfer knowledge and skills to a variety of settings and problems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student explores the employability characteristics of a successful worker in the global economy. The student is expected to:

(A) determine academic knowledge and skills required for postsecondary education;

(B) identify employers' expectations to foster positive customer satisfaction;

(C) demonstrate the professional standards required in the workplace such as interviewing skills, flexibility, willingness to learn new skills and acquire knowledge, self-discipline, self-worth, positive attitude, and integrity in a work situation;

(D) evaluate progress toward personal career goals;

(E) communicate effectively with others in the workplace to clarify objectives; and

(F) apply knowledge and skills related to health and safety in the workplace as specified by appropriate governmental regulations.

(2) The student applies academic skills to the requirements of welding. The student is expected to:

(A) demonstrate mathematical skills to estimate costs;

(B) explain the impact of accurate readings of measuring devices on cost estimates;

(C) justify the selection of a tool to make accurate measurements;

(D) compute measurements such as area, surface area, volume, and perimeter;

(E) solve problems using whole numbers, fractions, mixed numbers, and decimals;

(F) apply right triangle relationships using the Pythagorean Theorem; and

(G) select a mathematical formula for estimation.

(3) The student knows the functions and applications of the tools, equipment, technologies, and materials used in welding. The student is expected to:

(A) use welding equipment according to safety standards;

(B) dispose of environmentally hazardous materials used in welding;

(C) explain the importance of recycling materials used in welding;

(D) evaluate the performance impact of emerging technologies in welding;

(E) use appropriate personal protective equipment to follow safety measures; and

(F) investigate the use of automated welding machines such as numerical control, computer numerical control, and robotics-controlled welding machines.

(4) The student illustrates welding joint design, symbols, and welds. The student is expected to:

(A) use knowledge of engineering drawings to complete an advanced project; and

(B) evaluate projects using engineering drawing specifications.

(5) The student applies the concepts and skills of welding to perform tasks. The student is expected to:

(A) work independently in fabricating welded projects;

(B) work collaboratively with other students to complete a real-world application item; and

(C) troubleshoot equipment.

(6) The student analyzes the concepts and intricacies of inspections related to welding codes. The student is expected to:

(A) inspect the welding projects of team members;

(B) select codes for weld inspections; and

(C) critique and evaluate the weldments of team members.

(7) The student performs advanced cutting processes on carbon steels. The student is expected to:

(A) observe safe operating practices;

(B) apply safe handling of compressed gases; and

(C) perform cutting processes according to accepted welding standards.

(8) The student performs shielded metal arc welding on metals. The student is expected to:

(A) employ safe operating practices; and

(B) demonstrate skills required to make welds in all positions according to industry-accepted welding standards.

(9) The student performs flux cored metal arc welding. The student is expected to:

(A) use safe operating practices;

(B) perform fillet and groove welds; and

(C) perform welds in all appropriate positions according to industry-accepted welding standards.

(10) The student performs gas tungsten arc welding on metals. The student is expected to:

(A) employ safe operating practices;

(B) perform fillet and groove welds in all positions; and

(C) perform welds on metals such as carbon steel, stainless steel, pipe, and aluminum according to industry-accepted welding standards.

§127.823. Welding II Lab (One Credit), Adopted 2015.

(a) Implementation. The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(b) General requirements. This lab course is recommended for students in Grades 11 and 12. Prerequisite: Welding I. Corequisite: Welding II. This course must be taken concurrently with Welding II and may not be taken as a stand-alone course. Districts are encouraged to offer this course in a consecutive block with Welding II to allow students sufficient time to master the content of both courses. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) Welding II Lab provides an introduction to welding technology with an emphasis on basic welding laboratory principles and operating procedures. Topics include: industrial safety and health practices, hand tool and power machine use, measurement, laboratory operating procedures, welding power sources, welding career potentials, and introduction to welding codes and standards. This course provides knowledge, skills, and technologies required for employment in welding industries. Students will develop knowledge and skills related to this system and apply them to personal career development. This course supports integration of academic and technical knowledge and skills. Students will reinforce, apply, and transfer knowledge and skills to a variety of settings and problems. Knowledge about career

opportunities, requirements, and expectations and the development of workplace skills prepare students for future success.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards/employability skills as required by business and industry. The student is expected to:

(A) express ideas to others in a clear, concise, and effective manner through written and verbal communication;

(B) convey written information that is easily understandable to others;

(C) demonstrate acceptable work ethics in reporting for duty and performing assigned tasks as directed;

(D) conduct oneself in a manner acceptable for the profession and work site such as suitable dress and polite speech;

(E) choose the ethical course of action and comply with all applicable rules, laws, and regulations;

(F) review the fine, detailed aspects of both quantitative and qualitative work process and end products;

(G) evaluate systems and operations; identify causes, problems, patterns, or issues; and explore workable solutions or remedies to improve situations;

(H) follow written and oral instructions and adhere to established business practices, policies, and procedures, including health and safety rules; and

(I) prioritize tasks, follow schedules, and work toward goal-relevant activities in an effective, efficient manner.

(2) The student demonstrates the functions and applications of the tools, equipment, technologies, and metals used in code welding. The student is expected to:

(A) use welding equipment according to safety standards;

(B) identify and properly dispose of environmentally hazardous materials used in welding;

(C) explain the importance of recycling materials used in welding; and

(D) use appropriate personal protective equipment.

(3) The student applies the concepts and skills of welding of actual work situations. The student is expected to:

(A) work independently to fabricate welded projects with minimal assistance;

(B) work collaboratively with other students to complete relevant projects; and

(C) troubleshoot equipment.

(4) The student analyzes the concepts and intricacies of inspections and related codes. The student is expected to:

(A) explain weld inspection processes; and

(B) produce acceptable weldments to standards related to industry codes such as the American Welding Society (AWS), American National Standards Institute, and Canadian Welding Bureau.

(5) The student performs oxy-fuel cutting processes. The student is expected to:

(A) use safe operating practices;

(B) perform safe handling of compressed gases;

(C) assemble components involved in setting up for oxy-fuel gas cutting processes;

(D) demonstrate proper set-up for cutting techniques such as piercing, straight line, and bevel; and

(E) evaluate acceptable and unacceptable cuts.

(6) The student performs plasma arc cutting on metals. The student is expected to:

(A) use safe operating practices;

(B) explain the difference between safe and unsafe storage and handling of compressed gas supply;

(C) employ proper set-up procedures for plasma arc cutting; and

(D) demonstrate proper cutting techniques, including straight line, piercing, and bevels.

(7) The student performs shielded metal arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate shielded metal arc welding principles;

(C) demonstrate proper set-up procedures for shielded metal arc welding;

(D) select appropriate electrodes for base metal in shielded metal arc welding;

(E) perform welds such as fillet and groove according to industry-accepted welding standards;

(F) perform multiple pass welds;

(G) prepare joints for welding; and

(H) explain heating processes such as pre-heating and post-heating.

(8) The student demonstrates proper set-up procedure for gas metal arc welding. The student is expected to:

(A) use safe operating practices;

(B) demonstrate gas metal arc welding principles;

(C) demonstrate proper set-up for gas metal arc welding;

(D) select appropriate filler metals for base metal in gas metal arc welding; and

(E) perform fillet and groove welds in all positions according to industry-accepted welding standards.

(9) The student performs flux cored arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) employ and appraise flux cored arc welding principles;

(C) demonstrate proper set-up procedures for flux cored arc welding;

(D) appraise appropriate filler metal for base metal in flux cored arc welding;

(E) perform fillet and groove welds; and

(F) perform welds in all appropriate positions according to industry-accepted welding standards.

(10) The student performs gas tungsten arc welding principles and practices on metals. The student is expected to:

(A) use safe operating practices;

(B) demonstrate gas tungsten arc welding principles;

(C) demonstrate proper set-up for gas tungsten arc welding;

(D) select appropriate use of filler metals for base metal in gas tungsten arc welding; and

(E) perform welds in all appropriate positions according to industry-accepted welding standards.

(11) The student performs weldment fabrications. The student is expected to:

(A) identify layout tools;

(B) perform a part layout on plate according to a blueprint;

(C) perform a layout of a pipe fitting according to a blueprint; and

(D) perform an assembly according to a blueprint.

§127.865. Practicum in Manufacturing (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Manufacturing Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) The Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem;

(B) analyze information critically to determine its value; and

(C) conduct technical research to gather information for decision making.

(2) The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:

(A) analyze leadership characteristics such as trust, positive attitude, integrity, and willingness to accept key responsibilities in a work situation;

(B) demonstrate teamwork skills through working cooperatively with others to achieve tasks;

(C) demonstrate teamwork processes such as promoting team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate responsibility for organization tasks such as shared group and individual work tasks; and

(E) establish and maintain effective working relationships.

(3) The student demonstrates oral and written communication skills. The student is expected to:

(A) demonstrate the use of content such as technical concepts and vocabulary;

(B) employ verbal skills when obtaining and conveying information;

(C) use informational texts such as Internet websites and technical materials for occupational tasks;

(D) evaluate the reliability of information such as Internet websites, technical materials, and resources;

(E) interpret verbal and nonverbal cues and behaviors to enhance communication;

(F) apply active listening skills such as obtaining and clarifying the information; and

(G) use academic skills such as effective written and oral communication.

(4) The student demonstrates technical knowledge and skills required to pursue a career in the manufacturing cluster. The student is expected to:

(A) use information literacy skills such as accessing, evaluating, and disseminating information;

(B) describe information management;

(C) maintain records to facilitate ongoing business operations;

(D) develop goals;

(E) prioritize tasks;

(F) develop timelines using time-management skills;

(G) use project-management skills such as initiate, plan, execute, monitor and control, and close to improve workflow;

(H) evaluate proficiencies in technical skills; and

(I) accept critical feedback provided by the supervisor.

(5) The student documents technical knowledge and skills using a professional portfolio. The student is expected to:

(A) demonstrate growth of technical skill competencies;

(B) demonstrate technical knowledge and skills by completing activities such as earning licensures or certifications;

(C) develop an abstract of key points of the practicum;

(D) create a job-skills resume;

(E) collect representative work samples;

(F) maintain copies of evaluations from the practicum supervisor and/or industrial representative; and

(G) present the portfolio to interested stakeholders.

§127.866. Extended Practicum in Manufacturing (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Manufacturing Career Cluster. Corequisite: Practicum in Manufacturing. This course must be taken concurrently with Practicum in Manufacturing and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Manufacturing Career Cluster focuses on planning, managing, and performing the processing of materials into intermediate or final products and related professional and technical support activities such as production planning and control, maintenance, and manufacturing/process engineering.

(3) The Extended Practicum in Manufacturing course is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(D) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) conduct technical research to gather information necessary for decision making.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) demonstrate an understanding of and consistently follow workplace safety rules and regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in teaching and training. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a manufacturing experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised manufacturing experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate growth of technical skill competencies;

(D) evaluate strengths and weaknesses in technical skill proficiency; and

(E) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
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Texas Education Agency
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SUBCHAPTER P. TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

19 TAC §§127.871 - 127.886, 127.921 - 127.924

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

§127.871. Principles of Transportation Systems (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) In Principles of Transportation Systems, students will gain knowledge and skills in the safe application, design, production, and assessment of products, services, and systems. This knowledge includes the history, laws and regulations, and common practices used in the transportation industry. Students should apply knowledge and skills in the application, design, and production of technology as it relates to the transportation industries. This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops leadership experience as it relates to transportation systems. The student is expected to:

(A) plan, propose, conduct, and evaluate industry-based occupational experiences;

(B) apply proper record-keeping skills as they relate to industry-based occupational experiences;

(C) use a customized record-keeping system for the individual industry-based occupational experiences;

(D) discuss youth leadership opportunities to create a well-rounded industry-based occupational experience; and

(E) develop a work plan and budget.

(2) The student explores concepts related to cultural diversity. The student is expected to:

(A) identify significant similarities and differences in international culture;

(B) explain the variety of world markets; and

(C) describe marketing factors and practices that impact other cultures.

(3) The student understands the historical, current, and future significance of the transportation industries. The student is expected to:

(A) define terms associated with the transportation industries;

(B) identify the scope and effect on society of the transportation industries;

(C) identify significant historical and current developments in the transportation industries;

(D) identify potential future development for transportation industry systems;

(E) describe how emerging technologies and globalization impact the transportation industries; and

(F) compare and contrast issues affecting the transportation industries such as international trade, employment, safety, and environmental issues.

(4) The student analyzes the structure of transportation organizations. The student is expected to:

(A) describe common business management principles;

(B) identify opportunities for leadership development and personal growth;

(C) demonstrate democratic principles in conducting effective meetings;

(D) describe team dynamics; and

(E) describe the development of organizational vision, mission, and goals through the strategic planning process.

(5) The student explains the transportation industries at the local, state, national, and international levels. The student is expected to:

(A) identify reasons for world trade and globalization;

(B) identify the political impact of transportation;

(C) review regulations and major laws and evaluate their impact on transportation;

(D) read appropriate written material to stay abreast of current issues impacting transportation;

(E) collect public opinion and data in order to make informed decisions;

(F) use critical-thinking skills to identify and organize alternatives and evaluate public policy issues related to transportation; and

(G) evaluate performance and contract compliance of contractors and service providers.

(6) The student demonstrates appropriate interpersonal and communication skills. The student is expected to:

(A) examine workplace ethical and legal responsibilities;

(B) define the uses of proper etiquette;

(C) identify appropriate personal appearance and health habits;

(D) practice written and oral communication skills in formal and informal situations;

(E) practice effective listening skills in formal and informal situations;

(F) read and comprehend materials common to the transportation industry;

(G) employ writing and preparation skills using technical information; and

(H) demonstrate speaking skills.

(7) The student applies appropriate research methods for transportation systems. The student is expected to:

(A) define major fields of research and development;

(B) identify and apply scientific methods of research in transportation industries;

(C) use a variety of resources for research and development; and

(D) describe the scientific methods of research.

(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records related to transportation. The student is expected to:

(A) discuss project proposals;

(B) maintain records appropriate to transportation system industries;

(C) collect and organize data in graphs, tables, charts, and plots; and

(D) analyze and interpret data from graphs, tables, charts, and plots.

(9) The student uses information technology tools specific to transportation industries to access, manage, integrate, and create information. The student is expected to:

(A) use management software, email applications, and Internet applications;

(B) use word-processing, database, spreadsheet, and presentation software;

(C) examine collaborative, groupware, and virtual meeting software; and

(D) discuss Geographic Information Systems, Global Positioning Systems, and other computer-based equipment in transportation systems.

(10) The student discusses methods to reduce workplace hazards in order to promote a safe working environment. The student is expected to:

(A) discuss safe work practices and emergency procedures;

(B) identify rules and laws designed to promote safety and health in transportation environments;

(C) demonstrate first aid and cardiopulmonary resuscitation procedures;

(D) demonstrate proper use of safety equipment; and

(E) evaluate worksite safety areas and/or plans.

(11) The student examines Texas Department of Public Safety regulations as related to the transportation industry. The student is expected to:

(A) discuss rules pertaining to obtaining a commercial driver license (CDL);

(B) explain the different types of CDLs;

(C) discuss the various endorsements available for a CDL;

(D) discuss the requirements for each endorsement;

(E) identify material handling and storage equipment and forklifts, including electric- and fuel-powered forklifts; and

(F) identify types of transportation that supply warehouses and distribution centers.

§127.872. Principles of Distribution and Logistics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) In Principles of Distribution and Logistics, students will gain knowledge and skills in the safe application, design, production, and assessment of products, services, and systems. This knowledge includes the history, laws and regulations, and common practices used in the logistics of warehousing and transportation systems. Students should apply knowledge and skills in the application, design, and production of technology as it relates to distribution and logistics industries. This course allows students to reinforce, apply, and transfer their academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student develops leadership experience as it relates to distribution and logistics systems. The student is expected to:

(A) plan, propose, conduct, and evaluate industry-based occupational experiences;

(B) apply proper record-keeping skills as they relate to industry-based occupational experiences;

(C) use a customized record-keeping system for the individual industry-based occupational experiences;

(D) discuss youth leadership opportunities to create a well-rounded industry-based occupational experience; and

(E) develop a work plan and budget.

(2) The student explores concepts related to cultural diversity. The student is expected to:

(A) identify significant similarities and differences in international culture;

(B) explain the variety of world markets; and

(C) describe marketing factors and practices that impact other cultures.

(3) The student understands the historical, current, and future significance of the distribution and logistics industries. The student is expected to:

(A) define terms associated with the distribution and logistics industries;

(B) identify the scope and effect upon society of the distribution and logistics industries;

(C) identify significant historical and current developments in the distribution and logistics industries;

(D) identify potential future scenarios for the distribution and logistics industry systems;

(E) describe how emerging technologies and globalization impact the distribution and logistics industries; and

(F) compare and contrast issues affecting the distribution and logistics industries such as international trade, employment, safety, and environmental issues.

(4) The student analyzes the structure of distribution and logistics organizations. The student is expected to:

(A) describe common business management principles;

(B) identify opportunities for leadership development and personal growth;

(C) demonstrate democratic principles in conducting effective meetings;

(D) describe team dynamics; and

(E) describe the development of organizational vision, mission, and goals through the strategic planning process.

(5) The student explains the distribution and logistics industries at the local, state, national, and international levels. The student is expected to:

(A) identify reasons for world trade and globalization;

(B) identify the political impact of distribution and logistics;

(C) review regulations and major laws to evaluate their impact on distribution and logistics;

(D) read appropriate written material to stay abreast of current issues impacting distribution and logistics;

(E) collect public opinion and data in order to make informed decisions;

(F) use critical-thinking skills to identify and organize alternatives and evaluate public policy issues related to distribution and logistics; and

(G) evaluate performance and contract compliance of contractors and service providers.

(6) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) examine workplace ethical and legal responsibilities;

(B) define the uses of proper etiquette;

(C) identify appropriate personal appearance and health habits;

(D) practice written and oral communication skills in formal and informal situations;

(E) practice effective listening skills in formal and informal situations;

(F) employ writing and preparation skills using technical information; and

(G) demonstrate speaking skills.

(7) The student applies appropriate research methods for distribution and logistics systems. The student is expected to:

(A) define major fields of research and development;

(B) identify and apply scientific methods of research in distribution and logistics industries;

(C) use a variety of resources for research and development; and

(D) describe the scientific methods of research.

(8) The student applies problem-solving, mathematical, and organizational skills in order to maintain financial and logistical records. The student is expected to:

(A) discuss project proposals;

(B) maintain records appropriate to distribution and logistics system industries;

(C) collect and organize data in graphs, tables, charts, and plots; and

(D) analyze and interpret data from graphs, tables, charts, and plots.

(9) The student uses information technology tools specific to distribution and logistics industries to access, manage, integrate, and create information. The student is expected to:

(A) use management software, email applications, and Internet applications;

(B) use word-processing, database, spreadsheet, and presentation software;

(C) examine collaborative, groupware, and virtual meeting software;

(D) discuss Geographic Information Systems and Global Positioning Systems; and

(E) discuss other computer-based equipment in distribution and logistics systems.

(10) The student discusses methods to reduce sources of workplace hazards in order to promote a safe working environment. The student is expected to:

(A) discuss safe work practices and emergency procedures;

(B) identify rules and laws designed to promote safety and health in the distribution and logistics environments;

(C) demonstrate first aid and cardiopulmonary resuscitation procedures; and

(D) demonstrate proper use of safety equipment.

(11) The student examines material handling in warehouses and distribution centers. The student is expected to:

(A) discuss handling practices for goods and materials;

(B) explain size, weight, and shape requirements for packaging;

(C) discuss material handling, storage, and shipping methods;

(D) analyze visual design and appearance requirements for packages;

(E) discuss layout plans for processing packages;

(F) identify material handling and storage equipment; and

(G) identify types of warehouses and distribution centers.

§127.873. Introduction to Transportation Technology (One-Half Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Students shall be awarded one-half credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation, infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Introduction to Transportation Technology includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Transportation Technology includes applicable safety and environmental rules and regulations. In Transportation Technology, students will gain knowledge and skills in the repair, maintenance, and diagnosis of transportation systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:

(A) demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers;

(B) demonstrate effective written communication skills with individuals from various cultures such as fellow students, coworkers, and customers; and

(C) demonstrate mathematical skills in performing addition, subtraction, multiplication, division, and measurements using the metric and U.S. customary systems.

(2) The student understands the technical knowledge and skills of basic transportation systems. The student is expected to:

(A) locate, read, and interpret transportation repair and service information; and

(B) describe the basic and emerging transportation technologies.

(3) The student knows the functions and applications of the tools, equipment, technologies, and materials used in transportation technology. The student is expected to:

(A) demonstrate awareness of the proper way to safely use hand and power tools and equipment commonly employed in the industry;

(B) identify diagnostic tools and equipment; and

(C) identify hand and shop tools and describe their proper usage.

§127.874. Introduction to Small Engine Technology (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Introduction to Small Engine Technology includes knowledge of the function and maintenance of the systems and components of all types of small engines such as outdoor power equipment, motorcycles, generators, and irrigation engines. This course is designed to provide training for employment in the small engine technology industry. Instruction includes the repair and service of cooling, air, fuel, lubricating, electrical, ignition, and mechanical systems. In addition, the student will receive instruction in safety, academic, and leadership skills as well as career opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe and demonstrate ethical and legal responsibilities for appropriate workplace conduct;

(B) demonstrate proper etiquette and behavior;

(C) demonstrate appropriate personal appearance and hygiene;

(D) practice written and oral communication skills and employ effective listening skills;

(E) employ technical writing and preparation skills; and

(F) demonstrate effective speaking skills through prepared and extemporaneous oral presentations.

(2) The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:

(A) describe emerging technologies and their impact on the small engine technology industry;

(B) identify issues affecting the small engine technology industry related to employment, safety, and environmental issues;

(C) discuss regulations and laws and their impact on the small engine technology industry; and

(D) read appropriate written material to stay abreast of current issues impacting the small engine technology industry.

(3) The student participates in opportunities for leadership development and personal growth. The student is expected to:

(A) participate in the planning and development of leadership and skill development activities such as conducting effective meetings, team building activities, and strategic planning; and

(B) use resources available through an organization such as a career and technical student organization to develop employability skills.

(4) The student identifies the skills used to maintain and operate a small engine maintenance facility. The student is expected to:

(A) perform preventative maintenance schedule plans and systems to keep facility, tools, and equipment operating safely and properly;

(B) use the preventative maintenance schedule of the facility, tools, and equipment to determine repair or replacement needs;

(C) complete repair orders and paperwork related to the small engine technology industry to properly document work needed or completed;

(D) estimate parts and labor costs on repair orders for small engine repair; and

(E) locate, read, and interpret service repair information such as small engine schematics, charts, and service-repair manuals and bulletins.

(5) The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:

(A) develop project proposals;

(B) develop and maintain records appropriate to the small engine technology industry;

(C) describe mathematical formulas used to perform engine calculations such as calculating cylinder volume, engine displacement, combustion chamber volume, compressed head gasket volume, piston and deck height, piston dish volume, dome volume, cylinder volume, compression ratio, and horsepower;

(D) describe mathematical formulas used to perform electrical calculations such as calculating electrical resistance, current, and voltage in engines; and

(E) apply Ohm's law to small engine electrical circuits using a digital multimeter.

(6) The student uses information technology resources specific to the small engine technology industry to access, manage, integrate, and create information. The student is expected to:

(A) use personal management software such as email and Internet applications and word-processing, database, spreadsheet, presentation, collaborative, groupware, and virtual meeting software;

(B) discuss Geographic Information Systems and Global Positioning Systems applications; and

(C) use computer-based equipment.

(7) The student demonstrates an understanding of technical knowledge and skills of small engine technology. The student is expected to:

(A) identify the use and application of small engines and their components;

(B) identify the components of electrical-electronic systems;

(C) demonstrate awareness of engine designs, components, and applications;

(D) identify and use engine measuring tools and test equipment;

(E) use tools used in the operation, maintenance, and repair of small engines;

(F) compare and contrast the characteristics of two- and four-cycle engines; and

(G) identify and discuss the functions of the major small engine components.

(8) The student applies technical knowledge and skills in simulated or actual work situations. The student is expected to:

(A) troubleshoot and repair small engines;

(B) assess the proper fuel mixtures and analyze the efficiency of various fuels used in small engines;

(C) distinguish between valve arrangement positions and analyze valve timing with respect to crankshaft rotation;

(D) perform preventative maintenance and service engine lubrication, cooling, starting, fuel, and ignition systems and associated fluids and filters;

(E) perform routine installations, inspections, adjustments, and maintenance on small engines using testing tools and equipment;

(F) demonstrate knowledge of electrical testing tools and equipment commonly used in small engine maintenance;

(G) perform measurements using precision instruments;

(H) inspect and measure small engine parts for wear tolerances;

(I) explain the relationship between an electric current and magnetic fields in ignition, charging, and starting systems; and

(J) analyze the effects of heating and cooling on small engines.

§127.875. Small Engine Technology (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Introduction to Small Engine Technology. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Small Engine Technology includes advanced knowledge of the function, diagnosis, and service of the systems and components of all types of small engines such as outdoor power equipment, motorcycles, generators, and irrigation engines. This course is designed to provide hands-on and practical application for employment in the small engine technology industry. Instruction includes the repair and service of cooling, air, fuel, lubricating, electrical, ignition, and

mechanical systems and small engine overhauls. In addition, students will receive instruction in safety, academic, and leadership skills as well as career opportunities.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe, demonstrate, and apply ethical and legal responsibilities for appropriate workplace conduct;

(B) demonstrate proper etiquette and behavior;

(C) demonstrate appropriate personal appearance and hygiene;

(D) demonstrate effective written and oral communication skills and employ effective listening skills;

(E) demonstrate advanced technical writing and preparation skills; and

(F) demonstrate effective speaking skills through prepared and extemporaneous oral presentations.

(2) The student participates in opportunities for leadership development and personal growth. The student is expected to:

(A) participate in the planning and development of leadership and skill development activities such as conducting effective meetings, team building activities, and strategic planning;

(B) use resources available through an organizations such as a career and technical student organizations to develop employability skills; and

(C) record individual progress to document achievements.

(3) The student describes the historical, current, and future significance of the small engine technology industry. The student is expected to:

(A) describe emerging technologies and their impact on the small engine technology industry;

(B) compare and contrast issues affecting the small engine technology industry related to employment, safety, environmental, and regulatory issues; and

(C) describe local and global market conditions and practices that impact the application and need of the small engine technology industry.

(4) The student identifies the skills used to maintain and operate a small engine maintenance facility. The student is expected to:

(A) develop, evaluate, and perform preventative maintenance plans and systems to keep facility, tools, and equipment operating safely and properly;

(B) complete repair orders and paperwork related to the small engine technology industry to properly document work needed or completed such as ensuring proper customer communication and authorization;

(C) estimate parts and labor costs on repair orders for small engine repair;

(D) describe common business management principles such as technician productivity, shop efficiency, and profit margins; and

(E) locate, read, and interpret service repair information such as small engine schematics, charts, and technical bulletins.

(5) The student applies appropriate research methods to small engine technology topics. The student is expected to:

(A) use a variety of resources to research, trouble shoot, and diagnose concerns and failures; and

(B) describe the application of the scientific method of research to small engine technology such as identifying a problem, establishing a procedure, performing direct and indirect observation, collecting and interpreting data, and drawing conclusions by verifying the complaint, determining the related symptoms, analyzing the symptoms, isolating the trouble, correcting the trouble, and checking for proper operation.

(6) The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:

(A) develop project proposals;

(B) develop and maintain records appropriate to the small engine technology industry;

(C) collect and organize data in graphs, tables, and charts;

(D) analyze and interpret data from graphs, tables, and charts;

(E) use mathematical formulas to perform engine calculations such as calculating cylinder volume, engine performance and enhancement, engine displacement, combustion chamber volume, compressed head gasket volume, piston and deck height, piston dish volume, dome volume, cylinder volume, compression ratio, and horsepower;

(F) use mathematical formulas to perform electrical calculations such as calculating and measuring electrical resistance, current, and voltage in engines;

(G) apply Ohm's law to small engine electrical circuits using a digital multimeter; and

(H) apply electrical principles to diagnose and repair small engine components such as generators, electric motors, power supplies, electronic amplifiers, relays, and circuits.

(7) The student uses information technology tools specific to the small engine technology industry to access, manage, integrate, and create information. The student is expected to:

(A) use personal management software such as email and Internet applications and word-processing, database, spreadsheet, presentation, collaborative, groupware, and virtual meeting software;

(B) discuss Geographic Information Systems and Global Positioning Systems applications; and

(C) use other computer-based equipment.

(8) The student demonstrates advanced technical knowledge and skills of small engine technology. The student is expected to:

(A) demonstrate the use and application of small engines and components;

(B) demonstrate the components of electrical-electronic systems;

(C) demonstrate knowledge of engine designs, components, and applications; and

(D) demonstrate the correct use of engine measuring tools and test equipment.

(9) The student demonstrates advanced technical knowledge and skills in simulated or actual work situations. The student is expected to:

(A) troubleshoot and repair small engines;

(B) perform preventative maintenance on small engines;

(C) assess the proper fuel mixtures and analyze the efficiency of various fuels used in small engines;

(D) distinguish between valve arrangement positions and analyze valve timing with respect to crankshaft rotation;

(E) perform preventative maintenance and service engine lubrication, cooling, starting, fuel, and ignition systems and associated fluids and filters;

(F) perform routine installations, inspections, adjustments, and maintenance on small engine testing tools and equipment;

(G) demonstrate knowledge of electrical testing tools and equipment commonly used in small engine maintenance such as digital multimeters;

(H) perform measurements using precision instruments such as micrometers, dial indicators, and Vernier calipers;

(I) inspect and measure small engine parts for wear tolerances and compare to specifications;

(J) demonstrate the relationship between an electric current and magnetic fields in ignition, starting, and charging systems with the use of test equipment;

(K) analyze the effects of heating and cooling on small engines;

(L) explain the thermophysical properties of fluids commonly used in small engine systems;

(M) explain the laws of thermodynamics;

(N) explain torque, horsepower, and heat energy transfer in small engines;

(O) calculate speed and acceleration in small engines; and

(P) compare and contrast efficiency of various engine sizes and types.

§127.876. Automotive Basics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Automotive Basics includes knowledge of the basic automotive systems and the theory and principles of the components that make up each system and how to service these systems. Automotive Basics includes applicable safety and environmental rules and regulations. In Automotive Basics, students will gain knowledge and skills in the repair, maintenance, and servicing of vehicle systems. This study allows students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe, demonstrate, and apply ethical and legal responsibilities for appropriate workplace conduct;

(B) demonstrate proper etiquette and behavior;

(C) demonstrate appropriate personal appearance and hygiene;

(D) demonstrate effective written and oral communication skills and employ effective listening skills;

(E) demonstrate advanced technical writing and preparation skills; and

(F) demonstrate effective speaking skills through prepared and extemporaneous oral presentations.

(2) The student demonstrates academic skills related to the requirements of automotive technology. The student is expected to:

(A) demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers;

(B) demonstrate effective written communication skills, including documenting on a repair order the customer concern/complaint, root cause of the failure, and corrective action to complete the repair; and

(C) demonstrate mathematical skills in performing addition, subtraction, multiplication, division, and measurements using decimals and fractions in the metric and U.S. standard systems as appropriate.

(3) The student understands the technical knowledge and skills of basic automotive systems. The student is expected to:

(A) describe the eight major vehicle systems;

(B) locate, read, and interpret vehicle maintenance and service information; and

(C) describe the basic and emerging vehicle power systems.

(4) The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive services. The student is expected to:

(A) demonstrate the proper way to safely use hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;

(B) discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;

(C) identify diagnostic tools and equipment; and

(D) identify hand and shop tools and describe their proper usage.

(5) The student applies technical knowledge and skills in simulated or actual work situations. The student is expected to:

(A) demonstrate the procedures for ordering and locating parts;

(B) demonstrate an understanding of the operation theory of internal combustion engines;

(C) identify brake system components, including drum, disc, power assist, and anti-lock braking system (ABS);

(D) demonstrate an understanding of basic concepts related to hydraulic brakes systems, including Pascal's Theory of Hydraulics;

(E) demonstrate an understanding of basic concepts related to electrical and electronic systems such as Ohm's law, voltage drop, resistance, amperage, voltage, and wiring diagram symbols;

(F) identify air-conditioning, heating, and accessory system components;

(G) inspect and identify chassis and power train components and systems;

(H) identify cooling and lubrication system components;

(I) identify steering and suspension components, including power steering;

(J) identify and interpret tire sidewall data information such as Department of Transportation (DOT) production date information, tire load capacity, inflation pressures, sizing description, and speed rating;

(K) compare the preventative maintenance schedules for a variety of vehicles based on their use;

(L) perform a preventative maintenance inspection;

(M) explain and perform a "jump-start" of a vehicle using jumper cables and a booster battery or an auxiliary power supply according to manufacturer recommended procedures; and

(N) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations.

§127.877. Automotive Technology I: Maintenance and Light Repair (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Recommended prerequisite: Automotive Basics. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Automotive Technology I: Maintenance and Light Repair includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. This course includes applicable safety and environmental rules and regulations. In Automotive Technology I: Maintenance and Light Repair, students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates academic skills related to the requirements of automotive technology. The student is expected to:

(A) demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers;

(B) demonstrate effective written communication skills, including documenting on a repair order the customer concern/complaint, root cause of the failure, and corrective action to complete the repair; and

(C) demonstrate mathematical skills in performing addition, subtraction, multiplication, division, and measurements using decimals and fractions in the metric and U.S. standard systems as appropriate.

(2) The student demonstrates technical knowledge and skills related to the manufacturer preventative maintenance schedule. The student is expected to:

(A) locate the manufacturer recommended preventative maintenance schedule;

(B) perform a preventative maintenance inspection of vehicle systems, including engine, fuel, lubrication, cooling, electrical, suspension, drive train, and air-conditioning systems;

(C) describe the function of the automotive chassis components, including braking, steering, transmission, drive train, and suspension systems;

(D) locate, read, and interpret service repair information such as schematics, charts, diagrams, graphs, parts catalogs, and technical bulletins;

(E) use published specifications to diagnose component wear and determine necessary repairs;

(F) identify the appropriate oil viscosity and capacity;

(G) verify operation of the instrument panel engine warning indicators;

(H) inspect engine assembly and document findings of fuel, oil, coolant, and other leaks;

(I) perform common fastener and thread repair, including removing broken bolt, restoring internal and external threads, and repairing internal threads with thread insert;

(J) inspect, replace, and adjust drive belts, tensioners, and pulleys;

(K) perform engine oil and filter change; and

(L) explain and perform a "jump-start" of a vehicle using jumper cables and a booster battery or an auxiliary power supply according to manufacturer recommended procedures.

(3) The student demonstrates the functions and applications of the tools, equipment, technologies, and materials used in automotive technology. The student is expected to:

(A) demonstrate the proper use of hand and power tools and equipment commonly employed in the maintenance and repair of vehicles; and

(B) discuss the proper handling and disposal of environmentally hazardous materials used in servicing vehicles.

(4) The student applies the technical knowledge and skills related to brakes in simulated or actual work situations. The student is expected to:

(A) explains Pascal's Theory of Hydraulics as it relates to the brake system;

(B) inspect brake system components, including master cylinder, brake lines, wheel cylinders, calipers, and flexible hoses and fittings, for external leaks and proper operation;

(C) inspect, measure, and refinish brake drum diameter to manufacturer specifications;

(D) remove, clean, and inspect brake shoes, springs, pins, clips, levers, adjusters/self-adjusters, other related brake hardware, and backing support plates;

(E) lubricate, reassemble, and pre-adjust brake shoes and parking brake;

(F) remove, inspect for damage or wear, clean, lubricate, and reassemble pads and retaining hardware, caliper assembly, and mounting components such as slides and pins for proper operation;

(G) refinish a rotor on and off a vehicle and measure final rotor thickness with manufacturer specifications;

(H) retract and re-adjust caliper piston on an integral parking brake system;

(I) check brake pedal travel with, and without, engine running to verify proper power booster operation;

(J) check brake pedal travel with, and without, engine running to verify proper power booster operation;

(K) check vacuum supply from a manifold or auxiliary pump to vacuum-type brake power booster; and

(L) describe the operation of a regenerative braking system.

(5) The student applies the technical knowledge and skills related to electrical systems in simulated or actual work situations. The student is expected to:

(A) demonstrate knowledge of electrical/electronic series, parallel, and series-parallel circuits using principles of electricity as defined by Ohm's Law;

(B) demonstrate proper use of a digital multimeter (DMM) when measuring source voltage, voltage drop, current flow, resistance, and ground circuits;

(C) use wiring diagrams to trace electrical/electronic circuits;

(D) demonstrate knowledge of the causes and effects from shorts, grounds, opens, and resistance problems in electrical/electronic circuits;

(E) confirm proper battery capacity for vehicle application and perform battery capacity test;

(F) perform battery state-of-charge test;

(G) inspect and clean the battery, fill battery cells, and check battery cables, connectors, clamps, and hold-downs;

(H) perform starter current draw test;

(I) inspect and test fusible links, circuit breakers, fuses, and relays;

(J) perform charging system output test;

(K) inspect, adjust, or replace generator/alternator drive belts and check pulleys and tensioners for wear and belt alignment;

(L) verify operation of instrument panel gauges and warning/indicator lights, and reset maintenance indicators;

(M) inspect interior and exterior lamps and sockets, including headlights and auxiliary light such as fog and driving lights and replace as needed; and

(N) verify windshield wiper and washer operation and replace wiper blades as needed.

(6) The student applies the technical knowledge and skills related to heating and air conditioning (A/C) in simulated or actual work situations. The student is expected to:

(A) identify refrigerant type and the safety and environmental concerns related to handling and storage;

(B) inspect engine cooling and heater systems hoses;

(C) inspect A/C-heater ducts, doors, hoses, cabin filters, and outlets;

(D) inspect A/C condenser for airflow restrictions; and

(E) identify hybrid vehicle A/C system electrical circuits and the service/safety precautions.

(7) The student applies the technical knowledge and skills related to manual and automatic drive train and axles in simulated or actual work situations. The student is expected to:

(A) identify the different fluid types used in both an automatic and manual transmission/transaxle;

(B) identify the fluid types and capacity required by application using service information;

(C) check fluid level in a transmission or a transaxle equipped with a dip-stick;

(D) check fluid level in a transmission or a transaxle not equipped with a dip-stick;

(E) check fluid condition and inspect for leaks;

(F) drain and replace fluid and filter or filters in an automatic transmission/transaxle;

(G) drain and replace fluid in an manual transmission/transaxle; and

(H) inspect power train mounts.

(8) The student applies the technical knowledge and skills related to engine performance in simulated or actual work situations. The student is expected to:

(A) inspect and explain the electrical/electronic components, sensors and circuits on an on board diagnostics (OBD) controlled engine;

(B) perform engine absolute manifold pressure tests such as vacuum or boost;

(C) verify engine operating temperature;

(D) remove and replace spark plugs and inspect secondary ignition components for wear and damage;

(E) describe the importance of operating all OBD II monitors for repair verification;

(F) retrieve and record diagnostic trouble codes, OBD II monitor status, and freeze frame data and clear codes when applicable;

(G) inspect, service, or replace air filters, filter housings, and intake duct work;

(H) replace fuel filter or filters;

(I) inspect integrity of the exhaust manifolds, exhaust pipes, mufflers, catalytic converters, resonators, tail pipes, and heat shields; and

(J) inspect, test, and service positive crankcase ventilation (PCV) system and its components such as the filter/breather cap, valve, tubes, orifices, and hoses.

(9) The student applies the technical knowledge and skills related to suspension systems and simulated or actual work situations. The student is expected to:

(A) identify and interpret tire sidewall data information such as Department of Transportation (DOT) production date information, tire load capacity, inflation pressures, sizing description, and speed rating;

(B) demonstrate tire tread depth measuring procedures using industry standards such as common tread depth gauges;

(C) demonstrate tire and wheel balance such as static and dynamic balance, and proper wheel weight selection;

(D) demonstrate tire and wheel measurements such as radial and lateral run-out in tire and wheel assembly;

(E) inspect steering linkage components and mounts such as inner and outer tie-rod ends, pitman arm, idler arm, inner rack and pinion ends, rack and pinion mounts, upper and lower ball joints, power steering pump, and hoses for leaks;

(F) remove, clean, inspect, and repack wheel bearings, properly install wheel seals, and adjust wheel bearing pre-load;

(G) inspect shock absorbers and McPherson struts for leakage and performance using jounce and rebound tests;

(H) demonstrate wheel stud replacement and installation of wheel and tire assembly with proper torqueing procedure;

(I) identify and test the Tire Pressure Monitoring Systems (TPMS), both the direct and indirect, for proper operation;

(J) dismount and mount a tire on a wheel and reinstall the assembly, including torqueing the lug nuts; and

(K) rotate tires according to manufacturer recommendations.

§127.878. Automotive Technology II: Automotive Service (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Automotive Technology I: Maintenance and Light Repair. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure plan-

ning and management, logistics services, mobile equipment, and facility maintenance.

(3) Automotive Technology II: Automotive Service includes knowledge of the major automotive systems and the principles of diagnosing and servicing these systems. Automotive Technology II: Automotive Service includes applicable safety and environmental rules and regulations. In this course, students will gain knowledge and skills in the repair, maintenance, and diagnosis of vehicle systems. This study will allow students to reinforce, apply, and transfer academic knowledge and skills to a variety of interesting and relevant activities, problems, and settings. The focus of this course is to teach safety, tool identification, proper tool use, and employability.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of automotive technology. The student is expected to:

(A) demonstrate effective written communication skills throughout the course, including documenting on a repair order customer concern/compliant, root cause of the failure, and corrective action to complete the repair;

(B) estimate the cost of parts and labor operations on repair orders throughout the course, including the flat rate system;

(C) demonstrate mathematical skills in performing addition, subtraction, multiplication, division, and measurements using decimals and fractions in the metric and U.S. standard systems as appropriate; and

(D) research applicable vehicle and service information, vehicle service history, service precautions, and technical service bulletins.

(2) The student demonstrates the technical knowledge and skills that form the core of knowledge of automotive service. The student is expected to:

(A) diagnose the major components of powered vehicles;

(B) diagnose automotive chassis and driveline components;

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair information and technical bulletins;

(D) locate the manufacturer recommended preventative maintenance schedule;

(E) perform a preventative maintenance inspection;

(F) perform common fastener and thread repair, including removing broken bolt, restoring internal and external threads, and repairing internal threads with thread insert;

(G) perform precision measurements and use published specifications to diagnose component wear and determine necessary repairs; and

(H) employ critical-thinking skills and structured problem-solving skills to diagnose vehicle malfunctions, solve problems, and make decisions.

(3) The student knows the functions and applications of the tools, equipment, technologies, and materials used in automotive technology. The student is expected to:

(A) demonstrate the proper and safe use of hand and power tools and equipment commonly employed in the maintenance and repair of vehicles;

(B) discuss and demonstrate the proper handling and disposal of environmentally hazardous materials used in servicing vehicles;

(C) demonstrate proper use of diagnostic tools and equipment; and

(D) locate, read, and interpret service repair information such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair bulletins.

(4) The student applies the technical knowledge and skills related to suspension in simulated or actual work situations. The student is expected to:

(A) inspect and replace power steering hoses and fittings;

(B) remove, clean, inspect, repack, and install wheel bearings; replace seals; install hubs; and adjust bearings;

(C) replace wheel bearing and race;

(D) disable and enable supplemental restraint system (SRS);

(E) inspect, remove, and replace shock absorbers and struts and inspect mounts and bushings;

(F) dismount, inspect, and remount tire on wheel equipped with tire pressure monitoring system (TPMS);

(G) inspect rear suspension system lateral links/arms, trailing arms, leaf springs, spring insulators, shackles, brackets, center pins, and mounting bolts;

(H) inspect tire condition and wear patterns, check for correct size and application based on load and speed rating, and adjust air pressure;

(I) perform pre-alignment inspection and measure vehicle ride height;

(J) inspect tire and wheel assembly for air loss;

(K) identify and test indirect and direct TPMSs and operation of the instrument panel lamps;

(L) demonstrate knowledge of steps required to remove and replace sensors in a TPMS; and

(M) inspect, remove, and replace front wheel drive (FWD) bearings, hubs, seals, shafts, boots, and universal/constant velocity (CV) joints.

(5) The student applies the technical knowledge and skills related to electrical systems in simulated or actual work situations. The student is expected to:

(A) demonstrate knowledge of the causes and effects from shorts, opens, and resistance in electrical/electronic circuits;

(B) measure key-off battery drain/parasitic draw;

(C) perform solder repair of electrical wiring;

(D) replace electrical connectors and terminal ends;

(E) demonstrate the ability to maintain or restore electronic memory functions;

(F) perform slow and fast battery charges according to manufacturer recommendations;

(G) identify electronic modules, security systems, radios, and other accessories that require re-initialization or code entry after reconnecting a vehicle battery;

(H) perform starter current draw test and starter circuit voltage drop tests and inspect and test starter relays and solenoids;

(I) remove and install a starter in a vehicle;

(J) inspect and test switches, connectors, and wires of starter control circuits;

(K) perform charging system output test;

(L) remove, inspect, and re-install alternator;

(M) identify system voltage and safety precautions associated with high-intensity discharge headlights;

(N) disable and enable airbag system for vehicle service and verify indicator lamp operation;

(O) remove and reinstall a door panel; and

(P) describe the operation of keyless entry and remote-start systems.

(6) The student applies the technical knowledge and skills related to brakes in simulated or actual work situations. The student is expected to:

(A) describe procedure for performing a road test to check brake system operation, including an anti-lock brake system (ABS);

(B) measure brake pedal height, reserve distance, travel, and free play;

(C) identify components of brake warning light system;

(D) bleed and flush brake system;

(E) identify and check the operation of brake stop light system; and

(F) identify traction control and vehicle stability control system components.

(7) The student applies the technical knowledge and skills related to engine performance in simulated or actual work situations. The student is expected to:

(A) describe the importance of operating all on board diagnostics II (OBDII) monitors for repair verification;

(B) perform cylinder power balance test;

(C) perform cylinder cranking and running compression tests;

(D) perform cylinder leakage test;

(E) verify engine operating temperature;

(F) remove and replace spark plugs and inspect secondary ignition components for wear and damage; and

(G) retrieve and record diagnostic trouble codes and OBD II monitor status, freeze frame data, and clear trouble codes when applicable.

(8) The student applies the technical knowledge and skills related to engines in simulated or actual work situations. The student is expected to:

(A) install engine covers using gaskets, seals, and sealers as required;

(B) remove and replace timing belt and verify correct camshaft timing;

(C) perform cooling system pressure and dye tests to identify leaks, check coolant condition and level, and inspect and test radiator, pressure cap, coolant recovery tank, and heater core; and

(D) remove, inspect, and replace thermostat and gasket or seal.

(9) The student applies the technical knowledge and skills related to heating ventilation and air conditioning (HVAC) in simulated or actual work situations. The student is expected to:

(A) identify, locate, and replace cabin air filters;

(B) inspect air conditioning (A/C) condenser for airflow restrictions;

(C) identify the source of A/C system odors; and

(D) identify hybrid vehicle A/C system electrical circuits and safety precautions.

§127.879. Basic Collision Repair and Refinishing (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Basic Collision Repair and Refinishing includes knowledge of the processes, technologies, and materials used in the reconstruction of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development

in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of collision repair and refinishing technology. The student is expected to:

(A) apply effective oral and written communication skills with individuals from various cultures such as fellow workers, management, and customers;

(B) use technical writing skills to complete collision repair and refinishing orders and related paperwork; and

(C) locate and read documents such as service and repair information, technical bulletins, specifications, schematics, and parts catalogs.

(2) The student understands the technical knowledge and skills of basic collision repair and refinishing systems. The student is expected to:

(A) demonstrate an understanding of basic types of repair procedures used in the auto collision industry;

(B) demonstrate an understanding of basic preparation, application, and refinishing with various paint products; and

(C) estimate parts and labor costs on collision repair and refinishing orders.

(3) The student knows the basic function and application of tools, equipment, technologies, and materials used in collision repair and refinishing services. The student is expected to:

(A) identify hand and power tools and equipment commonly used in collision repair and refinishing;

(B) identify proper welding and cutting techniques and processes used in collision repair;

(C) identify environmentally hazardous materials and appropriate handling methods used in collision repair and refinishing technologies; and

(D) demonstrate awareness of new and emerging collision repair and refinishing technologies.

(4) The student reviews the technical knowledge and skills of collision repair and refinishing. The student is expected to:

(A) demonstrate the safe use of various hand and power tools and equipment commonly used in collision repair and refinishing;

(B) identify types of vehicle construction materials and associated repair methods;

(C) remove paint from the damaged area of a body panel;

(D) identify and repair surface irregularities on a damaged body panel;

(E) demonstrate hammer and dolly techniques for dent repair;

(F) prepare damaged area using water-based and solvent-based cleaners;

(G) identify, prepare, and apply body filler;

(H) rough sand body filler to contour panel and finish sand for the application of primer;

(I) demonstrate the proper preparation, application, and refinishing of various paint products;

(J) apply finish using appropriate spray techniques such as gun arc, angle, distance, travel speed, and spray pattern overlap for the finish being applied;

(K) apply basecoat and clear coat for overall refinishing; and

(L) sand, buff, and polish fresh or existing finish to remove defects as required.

§127.880. Collision Repair (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Basic Collision Repair and Refinishing. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Collision Repair includes knowledge of the processes, technologies, and materials used in the reconstruction of vehicles. This course is designed to teach the concepts and theory of systems related to automotive collision repair and refinishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of collision repair. The student is expected to:

(A) apply effective oral and written communication skills with individuals from various cultures such as fellow workers, management, and customers;

(B) use technical writing skills to complete collision repair orders and related paperwork;

(C) locate, read, and interpret documents such as service and repair information, technical bulletins, specifications, schematics, and parts catalogs; and

(D) apply mathematical skills to the estimating process such as establishing charges and totals, profit margins, technician productivity, and shop efficiency.

(2) The student understands the technical knowledge and skills of collision repair. The student is expected to:

(A) demonstrate an understanding of basic types of repair procedures for the different types of vehicle body construction used in the auto collision industry;

(B) demonstrate an understanding of pre-repair and repair inspection of non-damaged components;

(C) demonstrate the proper preparation, application, and refinishing of various paint products;

(D) estimate parts and labor costs of collision repair; and

(E) perform precision measurements to diagnose vehicle body shape and frame alignment angles.

(3) The student knows the function and application of tools, equipment, technologies, and materials used in collision repair. The student is expected to:

(A) use hand and power tools and equipment commonly employed in collision repair, according to industry safety standards;

(B) identify proper welding and cutting techniques and processes in in collision repair;

(C) properly handle and dispose of environmentally hazardous materials used in collision repair and refinishing technologies; and

(D) demonstrate knowledge of new and emerging collision repair technologies.

(4) The student applies the technical knowledge and skills of collision repair and refinishing to simulated or actual work situations. The student is expected to:

(A) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations;

(B) identify types of vehicle construction materials and associated repair methods;

(C) identify methods of collision energy management and types of damage;

(D) determine vehicle damage and prepare an estimate of the repair costs;

(E) determine body panel damage and identify the associated repair methods, including inspection, disassembly, and repair or replacement of components;

(F) inspect, remove, replace, and align various body components such as hoods, hinges, latches, and bumper covers;

(G) identify types of vehicle finishes and associated refinish techniques;

(H) inspect, remove, and replace bolted, bonded, and welded panels or panel assemblies;

(I) identify vehicle occupant restraint systems and associated repair methods;

(J) identify vehicle body components and assess for repair or replacement;

(K) demonstrate the welding and cutting processes used in vehicle collision repair;

(L) remove, install, and adjust vehicle mechanical systems and electrical components;

(M) identify and determine the cause of paint and refinishing defects;

(N) discuss interior and exterior trim repair;

(O) discuss corrosion protection, including sealers, adhesives, and under-coatings;

(P) prepare damaged area using water-based and solvent-based cleaners;

(Q) demonstrate vehicle detailing;

(R) restore sound deadeners and foam materials; and

(S) diagnose and repair water leaks, dust leaks, and wind noise.

(5) The student applies the technical knowledge and skills of metal finishing and body filling to simulated or actual work situations. The student is expected to:

(A) remove paint from damaged area of a body panel;

(B) identify and repair surface irregularities on a damaged body panel;

(C) demonstrate hammer and dolly techniques for dent repair;

(D) heat shrink stretched panel areas to proper contour;

(E) cold shrink stretched panel areas to proper contour;

(F) identify, prepare, and apply body filler;

(G) rough sand body filler to contour panel and finish sand for the application of primer;

(H) determine the proper metal finishing techniques for aluminum; and

(I) determine the proper application of body filler to aluminum.

(6) The student applies the technical knowledge and skills of moveable glass and hardware to simulated or actual work situations. The student is expected to:

(A) inspect, adjust, repair, or replace window systems such as regulators, run channels, glass, power mechanisms, and related controls;

(B) inspect, adjust, remove, repair, or reinstall body sealing systems such as weather stripping;

(C) inspect, adjust, repair, or replace regulators, run channels, glass, power mechanisms, and related controls for roof panel options such as sun roofs and convertible tops; and

(D) inspect, remove, reinstall, and align convertible tops and related mechanisms.

(7) The student applies the technical knowledge and skills of plastics and adhesives to simulated or actual work situations. The student is expected to:

(A) identify the types of plastics used in automotive applications;

(B) clean and prepare the surface of plastic parts;

(C) repair rigid, semi-rigid, or flexible plastic panels;

(D) remove or repair damaged areas from rigid exterior composite panels; and

(E) replace bonded rigid exterior composite body panels, including straightening or aligning panel supports.

(8) The student applies the technical knowledge and skills of damage analysis to simulated or actual work situations. The student is expected to:

(A) prepare vehicle for inspection by providing access to damaged areas;

(B) analyze damage to determine appropriate methods for overall repairs;

(C) perform visual inspection of structural components and members;

(D) identify structural damage using measuring tools and equipment;

(E) perform visual inspection of non-structural components and members;

(F) determine parts, components, material type(s), and procedures necessary for a proper repair;

(G) identify type and condition of finish and determine if refinishing is required;

(H) identify suspension, electrical, and mechanical component physical damage;

(I) identify safety systems physical damage;

(J) identify interior component damage;

(K) identify damage to add-on accessories and modifications; and

(L) identify single/one-time use components.

(9) The student applies the technical knowledge and skills of estimating in simulated or actual work situations. The student is expected to:

(A) locate and record customer/vehicle owner information;

(B) locate and record vehicle identification number (VIN) information, including nation of origin, make, model, restraint system, body type, production date, engine type, and assembly plant;

(C) identify and record vehicle options, including trim level, paint code, accessories, and modifications;

(D) identify the safety systems;

(E) apply appropriate estimating and parts terminology;

(F) determine and apply appropriate estimating sequence;

(G) utilize estimating guide procedure pages;

(H) estimate labor time for operations;

(I) select appropriate labor rates for each operation such as structural, non-structural, mechanical, and refinish;

(J) select and price replacement parts such as original equipment manufacturer (OEM), alternative/optional OEM, aftermarket, recycled/used, remanufactured, rebuilt, and reconditioned parts;

(K) determine labor time, prices, charges, allowances, or fees for non-included operations and miscellaneous items;

(L) determine additional material and charges such as environmental, administrative, shop, and disposal fees;

(M) determine refinishing material and charges;

(N) review computer-assisted and manually written estimates and verify that the information is correct;

(O) identify labor time and material charges for restoring corrosion protection; and

(P) determine the approximate vehicle retail value compared to the repair cost.

§127.881. Paint and Refinishing (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Basic Collision Repair and Refinishing or Collision Repair. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Paint and Refinishing includes knowledge of the processes, technologies, and materials used in the reconstruction of vehicles. This course is designed to teach the concepts and theory of systems related to automotive paint and refinishing.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student relates core academic skills to the requirements of paint and refinishing. The student is expected to:

(A) demonstrate effective oral and written communication skills with individuals from various cultures such as fellow workers, management, and customers;

(B) use technical writing skills to complete paint and refinishing orders and related paperwork;

(C) locate, read, and interpret documents such as service and repair information, technical bulletins, specifications, schematics, and parts catalogs; and

(D) demonstrate competencies required to use and interpret service repair bulletins.

(2) The student understands the technical knowledge and skills of paint and refinishing systems. The student is expected to:

(A) demonstrate the basic types of refinishing procedures for the different types of vehicle body construction used in the auto refinishing industry;

(B) demonstrate the proper preparation, application, and refinishing with various paint products, decals, and adhesives;

(C) estimate parts and labor costs on paint and refinishing orders; and

(D) perform precision measurements of paint and materials.

(3) The student knows the function and application of tools, equipment, technologies, and materials used in paint and refinishing services. The student is expected to:

(A) identify safety and personal health hazards according to Occupational Safety and Health Association (OSHA) guidelines and the "Right to Know Law";

(B) inspect spray environment and equipment to ensure compliance with federal, state, and local regulations and for safety and cleanliness hazards;

(C) select, use, inspect, ensure fit and operation, and perform maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation of a National Institute of Occupational of Safety and Health (NIOSH) approved air purifying respirator;

(D) select, use, and perform maintenance in accordance with OSHA Regulation 1910.134 and applicable state and local regulation for a NIOSH approved fresh air make-up respirator system;

(E) select and use the proper personal safety equipment such as gloves, suits, hoods, and eye and ear protection;

(F) use hand and power tools and equipment commonly employed in paint and refinishing technologies, according to industry safety standards;

(G) properly handle and dispose of environmentally hazardous materials used in paint and refinishing technologies; and

(H) demonstrate knowledge of new and emerging paint and refinishing technologies.

(4) The student applies the technical knowledge and skills of paint and refinishing to simulated or actual work situations. The student is expected to:

(A) perform regular audits and inspections to maintain compliance with safety, health, and environmental regulations;

(B) inspect types of vehicle construction materials and associated refinishing methods;

(C) identify different types of vehicle finishes and associated refinish techniques;

(D) inspect, identify, and determine the cause of paint and refinishing defects;

(E) discuss corrosion protection; and

(F) demonstrate vehicle detailing.

(5) The student applies the technical knowledge and skills of surface preparation to simulated or actual work situations. The student is expected to:

(A) inspect and identify type of finish, surface condition, and film thickness and develop and document a plan for refinishing;

(B) featheredge areas to be refinished;

(C) apply suitable metal treatment or primer;

(D) mask and protect other areas that will not be refinished;

(E) mix primer, primer-surfacer, or primer-sealer;

(F) identify a complimentary color or shade of undercoat to improve coverage;

(G) apply primer onto surface of repaired area;

(H) remove dust from area to be refinished, including cracks or moldings of adjacent areas;

(I) clean area to be refinished using a final cleaning solution;

(J) remove, with a tack rag, any dust or lint particles from the area to be refinished;

(K) apply suitable sealer to the area being refinished;

(L) apply stone chip resistant coating;

(M) identify the types of rigid, semi-rigid, or flexible plastic parts to be refinished and determine the materials needed and preparation and refinishing procedures; and

(N) identify metal parts to be refinished and determine the materials needed and preparation and refinishing procedures.

(6) The student applies the technical knowledge and skills of spray gun and related components to simulated or actual work situations. The student is expected to:

(A) inspect, clean, and determine condition of spray guns, spray environment, and related equipment such as air hoses, regulators, air lines, and air source;

(B) select spray gun setup, including fluid needle, nozzle, and cap, for product being applied;

(C) test and adjust spray gun using fluid, air, and pattern control valves; and

(D) demonstrate an understanding of the operation of pressure spray equipment.

(7) The student applies the technical knowledge and skills of paint mixing, matching, and applying techniques to simulated or actual work situations. The student is expected to:

(A) identify color code by manufacturer vehicle information label;

(B) measure, shake, stir, reduce, catalyze/activate, and strain refinish materials;

(C) apply finish using appropriate spray techniques, including gun arc, angle, distance, travel speed, and spray pattern overlap, for the finish being applied;

(D) apply selected product on test or let-down panel and check for color match;

(E) apply single stage topcoat;

(F) apply basecoat and clearcoat for panel blending and panel refinishing;

(G) apply basecoat and clearcoat for overall refinishing;

(H) remove nibs or imperfections from basecoat;

(I) refinish rigid or semi-rigid plastic parts;

(J) refinish flexible plastic parts;

(K) apply multi-stage coats for panel blending and overall refinishing;

(L) identify and mix paint using a formula;

(M) identify poor hiding colors and determine necessary action;

(N) tint color using formula to achieve a blendable match;

(O) identify alternative color formula to achieve a blendable match; and

(P) identify the materials, equipment, and preparation differences between petroleum and waterborne technologies.

(8) The student applies the technical knowledge and skills of final detailing to simulated or actual work situations. The student is expected to:

(A) apply decals, transfers, tapes, woodgrains, and pinstripes such as painted and taped;

(B) sand, buff, and polish fresh or existing finish to remove defects as required;

(C) clean vehicle interior, exterior, and glass;

(D) clean body openings such as door jambs and edges;

(E) remove overspray; and

(F) complete quality control using a checklist.

§127.882. Diesel Equipment Technology I (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9-12. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Diesel Equipment Technology I includes knowledge of the function and maintenance of diesel systems. Rapid advances in diesel technology have created new career opportunities and demands in the transportation industry. This course provides the knowledge, skills, and technologies required for employment in transportation systems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:

(A) demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers;

(B) demonstrate effective written communication skills with individuals from various cultures such as fellow students, coworkers, and customers; and

(C) demonstrate mathematical skills and precision measurements using the metric and U.S. standard systems.

(2) The student demonstrates technical knowledge and skills of diesel equipment technology. The student is expected to:

(A) describe the function of the major components of diesel powered vehicles such as engines, fuel injection systems, lubrication, cooling, electrical, air-conditioning systems, air induction, exhaust, and emissions;

(B) describe the function of the chassis components such as braking, steering, transmission, drivetrain, suspension systems, pneumatics, and hydraulics;

(C) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair information and technical bulletins; and

(D) demonstrate precision measurement procedures to diagnose component wear, compare measurements to published specifications, and determine necessary repairs.

(3) The student learns the functions and applications of the tools, equipment, technologies, and materials used in diesel equipment service. The student is expected to:

(A) describe and demonstrate the safe use of hand and power tools and equipment commonly used in the diesel equipment field;

(B) discuss the proper handling and disposal of environmentally hazardous materials generated in the service of diesel equipment;

(C) describe new and emerging diesel technologies;

(D) identify and perform the use of diagnostic tools and equipment; and

(E) describe hydraulic/pneumatic properties, controls, and safety.

(4) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:

(A) describe the parts management procedures such as ordering, stocking, and locating parts;

(B) demonstrate procedures for removal, inspection, and replacement of engine components;

(C) describe procedures for inspection and maintenance of ancillary systems such as braking, steering, suspension, and hydraulic/pneumatic systems;

(D) demonstrate and apply the concepts of electrical circuit testing, including Ohm's law, voltage drop, resistance, amperage, and voltage, as related to batteries and charging and starting systems;

(E) demonstrate and apply the concepts of wiring diagrams and related symbols and series and parallel circuits;

(F) discuss the proper procedures to inspect and maintain auxiliary systems such as air-conditioning, heating, and accessory systems;

(G) demonstrate and apply the procedures to inspect and maintain chassis and power train systems;

(H) demonstrate and apply the procedures to inspect and maintain cooling and lubrication systems; and

(I) demonstrate an understanding of the process to perform regular audits and inspections to maintain compliance with appropriate regulations in areas such as safety, health, emissions, and environmental protection.

§127.883. Diesel Equipment Technology II (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Diesel Equipment Technology I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Diesel Equipment Technology II includes knowledge of the function, diagnosis, and service of diesel equipment systems. Rapid advances in diesel technology have created new career opportunities and demands in the transportation industry. This course provides the advanced knowledge, skills, and technologies required for employment in transportation systems.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates academic skills related to the requirements of transportation technology. The student is expected to:

(A) demonstrate effective oral communication skills with individuals from various cultures such as fellow students, coworkers, and customers;

(B) demonstrate effective written communication skills with individuals from various cultures such as fellow students, coworkers, and customers; and

(C) demonstrate mathematical skills and precision measurements using the metric and U.S. standard systems.

(2) The student demonstrates technical knowledge and skills of diesel equipment service and repair. The student is expected to:

(A) describe the function of the major components of diesel powered vehicles and equipment such as engines; fuel injection systems; lubrication, cooling, electrical, and air-conditioning systems; and air induction, exhaust, and emissions systems;

(B) perform system diagnostics and failure analyses;

(C) describe the function of the chassis components such as braking, steering, transmission, drivetrain, suspension systems, pneumatics, and hydraulics;

(D) diagnose, repair, and replace auxiliary equipment such as power take offs, hydraulic components, and pneumatic components;

(E) locate, read, and interpret documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair information and technical bulletins; and

(F) perform precision measurements and use published specifications to diagnose component wear and determine necessary repair or replacement.

(3) The student demonstrates the application of the tools, equipment, technologies, and materials used in diesel equipment diagnosis, service, and repair. The student is expected to:

(A) demonstrate safe use of hand and power tools and equipment commonly employed in diesel equipment technology;

(B) demonstrate the proper handling and disposal of environmentally hazardous materials generated in the servicing of diesel equipment;

(C) describe emerging diesel technologies;

(D) perform the proper use of diagnostic tools and equipment; and

(E) demonstrate knowledge of hydraulic/pneumatic properties, controls, and safety.

(4) The student applies the technical knowledge and skills of diesel equipment technology to simulated or actual work situations. The student is expected to:

(A) demonstrate parts inventory management such as ordering parts, stocking parts, and locating parts;

(B) demonstrate procedures for the diagnosis, removal, repair, and replacement of engine components such as cylinder heads, engine blocks, timing components, crankshafts, intake and exhaust systems, and ancillary and auxiliary systems;

(C) diagnose, service, and repair diesel equipment systems such as braking, steering, suspension, pneumatic, and hydraulic systems;

(D) diagnose and repair electrical and electronic systems such as starting, charging, lighting, computer controls, and on board diagnostics systems and components such as modules, solenoids, sensors, actuators, relays, and switches;

(E) demonstrate an understanding of the diagnosis, service, and repair of air-conditioning, heating, and accessory systems;

(F) diagnose, service, and repair chassis and power train systems;

(G) service and repair cooling and lubrication systems such as water pumps, oil pumps, radiators, and oil coolers;

(H) use appropriate diagnostic equipment on various diesel equipment systems; and

(I) perform regular audits and inspections to maintain compliance with appropriate regulations in areas such as emissions, safety, health, and environmental protection.

§127.884. Energy and Power of Transportation Systems (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Transportation Systems. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Energy and Power of Transportation Systems will prepare students to meet the expectations of employers in this industry and to interact and relate to others. Students will learn the technologies used to provide products and services in a timely manner. The businesses and industries of the Transportation, Distribution, and Logistics Career Cluster are rapidly expanding to provide new career and career advancement opportunities. Performance requirements will include academic and technical skills. Students will need to understand the interaction between various vehicle systems, including engines, transmissions, brakes, fuel, cooling, and electrical. Students will also need to understand the logistics used to move goods and services to consumers, as well as the components of transportation infrastructure.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student knows the functions and applications of the tools, equipment, technologies, and materials used in the field of energy and power of transportation systems. The student is expected to:

(A) discuss the safe use of hand and power tools and equipment commonly used in the maintenance and repair of engines; and

(B) discuss the use of audits and inspections to maintain compliance with safety, health, and environmental regulations.

(2) The student applies technical knowledge and skills to simulated situations. The student is expected to:

(A) identify the major components in a vehicular system;

(B) identify necessary maintenance and service of vehicular systems; and

(C) discuss preventative maintenance plans and systems to keep vehicular systems in operation.

(3) The student describes the historical, current, and future significance of the energy and power of transportation systems. The student is expected to:

(A) identify the scope and effect upon society of the energy and power of transportation systems; and

(B) identify potential future scenarios for the energy and power of transportation systems.

(4) The student uses academic skills to document the requirements of the energy and power of transportation systems. The student is expected to:

(A) demonstrate communication skills related to working with customers, technicians, and others;

(B) prepare documentation such as quotes, invoices, bills of lading, work orders, and other reports;

(C) read and interpret appropriate documents such as schematics, charts, diagrams, graphs, parts catalogs, and service-repair manuals and bulletins;

(D) perform precision measurements and use industry specifications to diagnose component shape and alignment issues and determine necessary repair;

(E) use critical-thinking skills to diagnose vehicular system malfunctions, solve problems, and make decisions; and

(F) demonstrate knowledge of regulations that govern the construction, maintenance, and service of energy and power of transportation systems.

§127.885. Management of Transportation Systems (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Recommended prerequisite: Principles of Transportation Systems. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) In Management of Transportation Systems, students will gain knowledge and skills in material handling and distribution and proper application, design, and production of technology as it relates to the transportation industries. This course includes the safe operation of tractor-trailers, forklifts, and related heavy equipment. This course will allow students to reinforce, apply, and transfer their academic knowledge and skills to management of transportation systems and associated careers.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates an understanding of the transportation systems. The student is expected to:

(A) explain the history and development of the U.S. transportation systems such as railroads, highways, airports, water systems, and intermodal vans;

(B) examine logistics systems used for the transportation of products and services;

(C) define practices and terms commonly used in international sales contracts as published by the International Chamber of Commerce;

(D) summarize laws and regulations concerning interstate and international trade;

(E) explain the role of homeland security in interstate and international trade;

(F) evaluate risk factors and social and economic trends such as factors and trends related to risk mitigation, policy issues, security, and culture;

(G) evaluate documentation and other requirements for interstate and international transportation and logistics;

(H) describe transportation issues such as internal processing, product and supply storage, forecasting, scheduling, cost analysis, documentation confirmation, packing lists, materials safety data sheets, product seals, packaging types, packaging labels, and routing issues;

(I) identify employer's expectations, appropriate work habits, ethical conduct, legal responsibilities, and good citizenship skills; and

(J) demonstrate computer skills related to transportation and materials handling.

(2) The student demonstrates an understanding of the U.S. Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration hazardous materials regulations. The student is expected to:

(A) discuss U.S. Department of Transportation regulations, including procedures or policies, material designations, packaging requirements, and operational rules;

(B) explain U.S. Department of Transportation, Environmental Protection Agency, and Occupational Safety and Health Administration compliance requirements concerning hazardous materials, hazardous waste operations, medical surveillance, personnel training, adequate ventilation, confined space hazards, and emergency preparedness and response;

(C) examine personal protective equipment;

(D) compare specifications for accident prevention signs and tags, retention of U.S. Department of Transportation markings, and placards and labels for toxic and hazardous materials;

(E) research handling and storage requirements for liquid fuels, liquid petroleum gas, carbon monoxide, and toxic and hazardous substances;

(F) examine emergency action plans, employee training requirements, evacuation procedure requirements, and facility and equipment safety standards;

(G) explain fire prevention resources, including portable fire extinguishers, fire management systems, employee alarm systems, and hazard communication; and

(H) examine fire prevention plans and documentation.

(3) The student demonstrates an understanding of tractor-trailer knowledge and skills. The student is expected to:

(A) read and interpret control systems;

(B) perform vehicle inspections and maintenance such as checking vehicle systems and components, diagnosing potential

problems, and developing malfunction reports and maintenance schedules and reports;

(C) perform visual search and inspection of a tractor-trailer;

(D) demonstrate operation of tractor-trailer controls such as shifting, backing, docking, coupling and uncoupling, and adjusting vehicle speed and conduct break-down procedures;

(E) explain the management and adjustment of vehicle speed and space relations;

(F) identify potential driving hazards and environmental conditions;

(G) examine emergency maneuvers, procedures, and accident reports; and

(H) discuss appropriate decision-making procedures for planning trips.

(4) The student demonstrates an understanding of forklift knowledge and skills. The student is expected to:

(A) explain Occupational Safety and Health Administration forklift safety standards, including equipment operation, battery maintenance, liquid propane tank maintenance, lift truck stability, load weight limits, seat belt requirements, overhead guards, tip over prevention, and ride-out procedures;

(B) perform visual inspection of forklifts and their operating environment;

(C) discuss proper start-up, shut-down, and traveling procedures;

(D) perform maintenance inspections and documentation procedures;

(E) discuss forklift attachments; and

(F) evaluate proper lifting, carrying, load stability, and stacking procedures for loading trailers, boxcars, and containers.

(5) The student demonstrates an understanding of heavy equipment knowledge and skills. The student is expected to:

(A) explain safety issues pertaining to heavy equipment operation;

(B) discuss principles and maintenance of heavy equipment components, including cooling systems, fuel systems, lubrication systems, electrical systems, air systems, power systems, braking systems, pneumatic systems, hydraulic systems, operator ergonomics systems, tires, tracks, and track frames;

(C) observe the operation of heavy equipment such as bull dozers, crawler tractors, backhoes, excavators, track hoes, graders, scrapers, skid steer loaders, mini excavators, dump trucks, trenchers, cranes, hoists, soil compactors, land planes, landscaping equipment, and quarry equipment;

(D) discuss safe transportation of heavy equipment; and

(E) discuss equipment theft prevention procedures.

§127.886. Distribution and Logistics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Recommended prerequisite: Principles of Distribution and Logistics. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Distribution and Logistics is designed to provide training for entry-level employment in distribution and logistics, This course focuses on the business planning and management aspects of distribution and logistics. To prepare for success, students will learn, reinforce, experience, apply, and transfer their knowledge and skills related to distribution and logistics.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student identifies concepts related to cultural diversity. The student is expected to:

(A) identify similarities and differences in international cultures;

(B) explain the variety of world markets; and

(C) describe marketing factors and practices that impact other cultures.

(2) The student describes the historical, current, and future significance of the distribution and logistics industries. The student is expected to:

(A) define terms associated with the distribution and logistics industries;

(B) identify the scope of the distribution and logistics industries and the industries' effect on society;

(C) identify significant historical and current issues in the distribution and logistics industries;

(D) identify potential future scenarios for the distribution and logistics industries;

(E) describe how emerging technology and globalization impacts the distribution and logistics industries; and

(F) compare and contrast issues affecting the distribution and logistics industries such as international trade, employment, safety, and environmental issues.

(3) The student explains the distribution and logistics industries at local, state, national, and international levels. The student is expected to:

(A) identify reasons for world trade and globalization;

(B) identify the political impact of distribution and logistics;

(C) review regulations and major laws to evaluate their impact on the distribution and logistics industries;

(D) read appropriate written material to stay abreast of current issues;

(E) use critical-thinking skills to identify and organize alternatives and evaluate public policy issues; and

(F) evaluate performance and contract compliance of contractors and service providers.

(4) The student demonstrates appropriate personal and communication skills. The student is expected to:

(A) describe and apply workplace ethical and legal responsibilities;

(B) define the uses of proper etiquette and behavior;

(C) identify appropriate personal appearance and health habits;

(D) practice written and oral communication skills and employ effective listening skills;

(E) comprehend technical reading materials common to the distribution and logistics industries;

(F) employ sound writing and preparation skills for prepared and extemporaneous oral presentations, including presentations of technical information; and

(G) demonstrate speaking skills.

(5) The student applies appropriate research methods for distribution and logistics topics. The student is expected to:

(A) define major fields of research and development;

(B) demonstrate proficiency in using a variety of resources for both research and development; and

(C) describe the scientific method of research.

(6) The student applies problem-solving, mathematical, and organizational skills to maintain financial and logistical records. The student is expected to:

(A) discuss project proposals;

(B) develop and maintain records;

(C) collect and organize data in graphs, tables, charts, and plots;

(D) analyze and interpret data from graphs, tables, charts, and plots;

(E) maintain appropriate financial records such as journals, inventories, income and expense logs, and financial statements and balance sheets;

(F) conduct formative, summative, and financial analyses of project learning objectives and records in order to problem-solve for the future;

(G) review commercial driver license (CDL) preparation guidelines; and

(H) explain CDL guidelines in preparation for testing.

(7) The student uses information technology tools to access, manage, and create information. The student is expected to:

(A) use personal management software, email applications, and Internet applications;

(B) use word-processing, database, spreadsheet, and presentation software;

(C) use collaborative or virtual meeting software;

(D) use and explain the benefits of Geographic Information Systems (GIS) and Global Positioning Systems (GPS) hardware and applications;

(E) use computer-based equipment to manage human resources and physical assets;

(F) use technology applications such as barcode systems to identify and track goods and shipments; and

(G) use mobile applications such as GPS to track goods and shipments.

(8) The student uses data to optimize distribution and logistics business operations such as storage, distribution routes, equipment, and human resources. The student is expected to:

(A) use data to identify areas of operation that need improvement to optimize business operations;

(B) identify alternative processes and procedures to improve and optimize business operations; and

(C) make data-based decisions on optimizing storage space and distribution routes.

(9) The student assesses and implements methods to reduce sources of workplace hazards common in the industry in order to promote a safe and accident-free work environment. The student is expected to:

(A) identify, assess, and control hazards to maintain safe and healthy working conditions;

(B) state the role and summarize the benefits of each component in a health, safety, and environmental management system;

(C) demonstrate emergency procedures to reduce and mitigate workplace accidents;

(D) perform tool, equipment, facility, and personal protective equipment audits and inspections;

(E) identify rules and laws designed to promote safety and health in the workplace; and

(F) demonstrate knowledge of first aid and cardiopulmonary resuscitation procedures and proper use of safety equipment.

(10) The student examines the planning, preparation, processing, handling, and storing of goods and materials in warehouses and distribution centers. The student is expected to:

(A) determine risks or damage from normal rigors such as compression, shock, drop, moisture, corrosion, vibration, temperature, and motion during transportation and handling;

(B) discuss the transporting and handling of hazardous materials;

(C) explain size, weight, and shape requirements for packaging;

(D) discuss handling, storage, and shipping methods for various types of packaging and warehouse and shipping providers;

(E) assess requirements for various packaging types;

(F) analyze visual design and appearance requirements, including displaying required documentation, handling information, and warnings;

(G) create layout plans for processing incoming and outgoing, cross-docking, and storage of products;

(H) evaluate material handling and storage equipment;

(I) assess the processing of incoming goods and materials using standard industry protocols and procedures; and

(J) examine equipment and staffing requirements and develop traffic management plans and work schedules.

(11) The student reviews issues related to interstate and international trade. The student is expected to:

(A) define terms commonly used in sales contracts as published by the International Chamber of Commerce;

(B) summarize laws and regulations concerning interstate and international trade;

(C) explain the role of homeland security in interstate and international trade;

(D) evaluate risk factors and social and economic trends such as factors and trends related to risk mitigation, policy change, security, and culture;

(E) evaluate documentation and other requirements for interstate and international transportation and logistics; and

(F) describe transportation issues such as internal processing, product and supply storage, forecasting, scheduling, cost analysis, documentation confirmation, packing lists, material safety data sheets, product seals, packaging types, packaging labels, and routing issues.

§127.921. Practicum in Transportation Systems (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Transportation, Distribution, and Logistics Career Cluster. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Practicum in Transportation Systems is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or worked based.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student demonstrates professional standards as required by business and industry. The student is expected to:

(A) adhere to policies and procedures;

(B) demonstrate positive work attitudes and behaviors, including demonstrating punctuality, time management, initiative, and cooperation;

(C) accept constructive criticism;

(D) apply ethical reasoning to a variety of situations in order to make ethical decisions;

(E) complete tasks with the highest standards to ensure quality products and services;

(F) model professional appearance, including using appropriate dress, grooming, and personal protective equipment; and

(G) comply with safety rules and regulations to maintain safe and healthy working conditions and environments in the practicum setting.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem to develop creative and innovative solutions;

(B) critically analyze information to determine its relevance to the problem-solving task;

(C) compare and contrast alternatives using a variety of problem-solving and critical-thinking skills; and

(D) conduct technical research to gather information necessary for decision making.

(3) The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:

(A) analyze leadership characteristics related to trusting others, maintaining a positive attitude and integrity, and accepting key responsibilities in a work situation;

(B) demonstrate teamwork skills through working cooperatively with others to achieve tasks;

(C) demonstrate teamwork processes that promote team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate responsibility for group and individual work tasks;

(E) establish and maintain effective working relationships in order to accomplish objectives and tasks;

(F) demonstrate effective working relationships using interpersonal skills;

(G) use positive interpersonal skills to work cooperatively with others;

(H) negotiate effectively to arrive at decisions;

(I) demonstrate respect for individuals, including those from different cultures, genders, and backgrounds; and

(J) demonstrate sensitivity to and value for diversity.

(4) The student demonstrates oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;

(B) employ verbal skills when obtaining and conveying information;

(C) use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks;

(D) evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources;

(E) interpret verbal and nonverbal cues or behaviors to enhance communication;

(F) apply active listening skills to obtain and clarify information; and

(G) use academic skills to facilitate effective written and oral communication.

(5) The student demonstrates technical knowledge and skills required to pursue a career in the transportation systems. The student is expected to:

(A) develop advanced technical knowledge and skills related to the student's personal career goals;

(B) evaluate technical skill proficiencies; and

(C) accept critical feedback provided by the supervisor.

(6) The student documents technical knowledge and skills. The student is expected to:

(A) update a professional portfolio to include information such as:

(i) attainment of technical skill competencies, licensures or certifications, recognitions, awards, and scholarships;

(ii) extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;

(iii) abstract of technical competencies mastered during the practicum;

(iv) resume;

(v) samples of work; and

(vi) evaluation from the practicum supervisor; and

(B) present the portfolio to interested stakeholders.

§127.922. Extended Practicum in Transportation Systems (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Transportation, Distribution, and Logistics Career Cluster. Corequisite: Practicum in Transportation Systems. This course must be taken concurrently with Practicum in Transportation Systems and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Extended Practicum in Transportation Systems is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. Extended Practicum in Transportation Systems can be either school lab based or worked based.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(D) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) understand and consistently follow workplace safety rules and regulations, including Occupational Safety and Health Administration regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in transportation systems. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a transportation systems experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised transportation systems experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate growth of technical skill competencies;

(D) evaluate strengths and weaknesses in technical skill proficiency; and

(E) collect representative work samples.

§127.923. Practicum in Distribution and Logistics (Two Credits), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the distribution and logistics industry. Students shall be awarded two credits for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Practicum in Distribution and Logistics is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. The Practicum can be either school lab based or work based.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) analyze elements of a problem to develop creative and innovative solutions;

(B) critically analyze information to determine its relevance to the problem-solving task;

(C) compare and contrast alternatives using a variety of problem-solving and critical-thinking skills; and

(D) conduct technical research to gather information necessary for decision making.

(2) The student demonstrates leadership and teamwork skills in collaborating with others to accomplish goals and objectives. The student is expected to:

(A) analyze leadership characteristics related to trusting others, maintaining a positive attitude and integrity, and accepting key responsibilities in a work situation;

(B) demonstrate teamwork skills through working cooperatively with others to achieve tasks;

(C) demonstrate teamwork processes that promote team building, consensus, continuous improvement, respect for the opinions of others, cooperation, adaptability, and conflict resolution;

(D) demonstrate responsibility for group and individual work tasks;

(E) establish and maintain effective working relationships in order to accomplish objectives and tasks;

(F) demonstrate effective working relationships using interpersonal skills;

(G) use positive interpersonal skills to work cooperatively with others;

(H) negotiate effectively to arrive at decisions;

(I) demonstrate respect for individuals, including those from different cultures, genders, and backgrounds; and

(J) demonstrate sensitivity to and value for diversity.

(3) The student demonstrates oral and written communication skills in creating, expressing, and interpreting information and ideas, including technical terminology and information. The student is expected to:

(A) demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions;

(B) employ verbal skills when obtaining and conveying information;

(C) use informational texts, Internet websites, and technical materials to review and apply information sources for occupational tasks;

(D) evaluate the reliability of information from informational texts, Internet websites, and technical materials and resources;

(E) interpret verbal and nonverbal cues or behaviors to enhance communication;

(F) apply active listening skills to obtain and clarify information; and

(G) use academic skills to facilitate effective written and oral communication.

(4) The student demonstrates technical knowledge and skills required to pursue a career in the distribution and logistics industries. The student is expected to:

(A) develop advanced technical knowledge and skills related to the student's personal career goals;

(B) evaluate technical skill proficiencies; and

(C) accept critical feedback provided by the supervisor.

(5) The student documents technical knowledge and skills. The student is expected to:

(A) update a professional portfolio to include information such as:

(i) attainment of technical skill competencies, licensures or certifications, recognitions, awards, and scholarships;

(ii) extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;

(iii) abstract of technical competencies mastered during the practicum;

(iv) resume;

(v) samples of work; and

(vi) evaluation from the practicum supervisor; and

(B) present the portfolio to interested stakeholders.

§127.924. Extended Practicum in Distribution and Logistics (One Credit), Adopted 2015.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2017-2018 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Transportation, Distribution, and Logistics Career Cluster. Corequisite: Practicum in Distribution and Logistics. This course must be taken concurrently with Practicum in Distribution and Logistics and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Transportation, Distribution, and Logistics Career Cluster focuses on planning, management, and movement of people, materials, and goods by road, pipeline, air, rail, and water and related professional support services such as transportation infrastructure planning and management, logistics services, mobile equipment, and facility maintenance.

(3) Extended Practicum in Distribution and Logistics is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience such as internships, mentorships, independent study, or laboratories. Extended Practicum in Distribution and Logistics can be either school lab based or work based.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student implements advanced professional communications strategies. The student is expected to:

(A) demonstrate verbal and non-verbal communication consistently in a clear, concise, and effective manner;

(B) analyze, interpret, and effectively communicate information, data, and observations;

(C) observe and interpret verbal and nonverbal cues and behaviors to enhance communication; and

(D) apply active listening skills to obtain and clarify information.

(2) The student applies concepts of critical thinking and problem solving. The student is expected to:

(A) employ critical-thinking skills with increased fluency both independently and in groups to solve problems and make decisions;

(B) analyze elements of a problem to develop creative and innovative solutions; and

(C) demonstrate the use of content, technical concepts, and vocabulary when analyzing information and following directions.

(3) The student understands and applies proper safety techniques in the workplace. The student is expected to:

(A) understand and consistently follow workplace safety rules and regulations, including Occupational Safety and Health Administration regulations; and

(B) demonstrate knowledge of procedures for reporting and handling accidents and safety incidents.

(4) The student understands the professional, ethical, and legal responsibilities in distribution and logistics systems. The student is expected to:

(A) demonstrate a positive, productive work ethic by performing assigned tasks as directed;

(B) apply ethical reasoning to a variety of situations in order to make ethical decisions; and

(C) comply with all applicable rules, laws, and regulations in a consistent manner.

(5) The student participates in a distribution and logistics experience. The student is expected to:

(A) conduct, document, and evaluate learning activities in a supervised distribution and logistics experience;

(B) develop advanced technical knowledge and skills related to the student's occupational objective;

(C) demonstrate growth of technical skill competencies;

(D) evaluate strengths and weaknesses in technical skill proficiency; and

(E) collect representative work samples.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
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CHAPTER 127. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER DEVELOPMENT AND CAREER AND TECHNICAL EDUCATION

(Editor's note: In accordance with Texas Government Code, §2002.014, which permits the omission of material which is "cumbersome, expensive, or otherwise inexpedient," the Figure: 19 TAC Chapter 127 - Preamble is not included in the print version of the Texas Register. The figure is available in the on-line version of the July 25, 2025, issue of the Texas Register.)

The State Board of Education (SBOE) adopts the repeal of §§127.277, 127.278, 127.314, 127.316 - 127.321, 127.323 - 127.326, 127.403, 127.410, 127.413 - 127.415, 127.417 - 127.433, 127.469 - 127.472, 127.474 - 127.480, 127.482, 127.625 - 127.632, 127.634 - 127.648, 127.652, 127.745 - 127.750, 127.754, 127.758 - 127.760, 127.766 - 127.768, 127.771 - 127.776, and 127.778 - 127.796, concerning Texas Essential Knowledge and Skills (TEKS) for career development and career and technical education (CTE). The repeals are adopted without changes to the proposed text as published in the February 28, 2025 issue of the *Texas Register* (50 TexReg 1090) and will not be republished. The repeals move some existing courses within 19 TAC Chapter 127 in order to avoid confusion and make the TEKS easier to locate.

REASONED JUSTIFICATION: In accordance with statutory requirements that the SBOE identify by rule the essential knowledge and skills of each subject in the required curriculum, the SBOE follows a board - approved cycle to review and revise the essential knowledge and skills for each subject.

The TEKS for courses associated with 14 CTE career clusters are codified by subchapter in 19 TAC Chapters 127 and 130. In December 2020, the SBOE began initial steps to prepare for the review and revision of CTE courses in programs of study for the education and training; health science; and science, technology, engineering, and mathematics career clusters. Two additional courses eligible to satisfy a graduation requirement in science were also part of the review. The board approved for second reading and final adoption new TEKS for these courses in November 2021 and January, April, and June 2022.

At the November 2023 SBOE meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in career preparation and entrepreneurship, which became effective February 13, 2024, and were implemented beginning in the 2024 - 2025 school year. At the April 2024 meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in agribusiness,

animal science, plant science, aviation maintenance, and engineering that will be implemented beginning in the 2025 - 2026 school year.

Due to the structure of 19 TAC Chapter 130, there are not enough sections to add new CTE courses under consideration in their assigned subchapters. To accommodate the addition of new and future courses, the board began the process of moving the CTE TEKS from Chapter 130 to Chapter 127 in order to keep all the TEKS together in administrative rule and avoid confusion. In addition, current subchapters in 19 TAC Chapter 127 are being assigned new subchapters within the same chapter. The related implementation sections are being repealed, and implementation information is being added to each individual course.

The proposed repeal of CTE courses in 19 TAC Chapter 127 was approved for first reading and filing authorization at the January 2025 meeting. At the April 2025 SBOE meeting, the board postponed second reading and final adoption of the proposed repeal.

The following figure provides a crosswalk between the current TEKS in Chapter 127 and the new location of those TEKS in Chapter 127. The adopted new sections can be found in the Adopted Rules section of this issue of the *Texas Register*.

Figure: 19 TAC Chapter 127 - Preamble

The SBOE approved the repeals for first reading and filing authorization at its January 31, 2025 meeting and for second reading and final adoption at its June 27, 2025 meeting.

In accordance with TEC, §7.102(f), the SBOE approved the repeals for adoption by a vote of two - thirds of its members to specify an effective date earlier than the beginning of the 2025 - 2026 school year. The earlier effective date will ensure the TEKS are available in their new location in time for districts of innovation with an earlier school start date to implement at the beginning of the school year districts. The effective date is August 1, 2025.

SUMMARY OF COMMENTS AND RESPONSES: The public comment period on the proposal began February 28, 2025, and ended at 5:00 p.m. on March 31, 2025. The SBOE also provided an opportunity for registered oral and written comments at its April and June 2025 meetings in accordance with the SBOE board operating policies and procedures. No public comments were received.

SUBCHAPTER F. BUSINESS, MARKETING, AND FINANCE

19 TAC §127.277, §127.278

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
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SUBCHAPTER G. EDUCATION AND TRAINING

19 TAC §§127.314, 127.316 - 127.321, 127.323 - 127.326

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

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SUBCHAPTER I. HEALTH SCIENCE

19 TAC §§127.403, 127.410, 127.413 - 127.415, 127.417 - 127.433

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

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SUBCHAPTER J. HOSPITALITY AND TOURISM

19 TAC §§127.469 - 127.472, 127.474 - 127.480, 127.482

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER M. LAW AND PUBLIC SERVICE

19 TAC §§127.625 - 127.632, 127.634 - 127.648, 127.652

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER O. SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS

19 TAC §§127.745 - 127.750, 127.754, 127.758 - 127.760, 127.766 - 127.768, 127.771 - 127.776, 127.778 - 127.796

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER I. ENGINEERING

19 TAC §§127.402 - 127.419, 127.452, 127.453

The State Board of Education (SBOE) adopts new §§127.402-127.419, 127.452, and 127.453, concerning Texas Essential Knowledge and Skills (TEKS) for engineering. The new sections are adopted with changes to the proposed text as published in the February 28, 2025 issue of the *Texas Register* (50 TexReg 1571) and will be republished. The adoption adds new courses and updates existing courses that are being moved to this subchapter in the civil engineering, engineering foundations, and mechanical and aerospace design programs of study to

ensure the content of the courses remains current and supports relevant and meaningful programs of study.

REASONED JUSTIFICATION: In accordance with statutory requirements that the SBOE identify by rule the essential knowledge and skills of each subject in the required curriculum, the SBOE follows a board-approved cycle to review and revise the essential knowledge and skills for each subject.

During the November 2022 meeting, the SBOE approved a timeline for the review of career and technical education (CTE) courses for 2022-2025. Also at the meeting, the SBOE approved a specific process to be used in the review and revision of the CTE TEKS. The CTE-specific process largely follows the process for TEKS review for other subject areas but was adjusted to account for differences specific to CTE. The 2022-2025 CTE cycle identified two reviews, beginning with the winter 2023 review of a small group of courses in career preparation and entrepreneurship. An abbreviated version of the new CTE TEKS review process was used for the winter 2023 review. The second review in the 2022-2025 CTE TEKS review cycle began in summer 2023. The complete CTE TEKS review process was used for the summer 2023 CTE TEKS review.

Texas Education Agency (TEA) staff began a CTE TEKS review process for engineering in December 2023. Applications to serve on the engineering 2024 CTE TEKS review work groups were collected by TEA from December 2023 through April 2024. TEA staff provided SBOE members with batches of applications for approval to serve on a CTE work group in February, March, and April 2024. Work groups convened to develop recommendations for the CTE courses in May, June, July, and August 2024. Additionally, work groups met for a final time in December 2024 to address feedback from the SBOE and to finalize their recommendations for the new standards.

The adopted new sections ensure the standards for engineering support relevant and meaningful programs of study.

The following changes were made to the rules since published as proposed.

New subsection (a)(2) was added in §§127.402-127.419, 127.452, and 127.453 to reference the employability skills in new §127.15.

Subsection (d)(1) in §§127.402-127.419, 127.452, and 127.453 related to employability skills was deleted since a new section on employability skills is being adopted in §127.15.

Subsection (d)(1) in §§127.402-127.406, 127.408-127.414, 127.417, 127.418, 127.452, and 127.453 related to engineering ethics was added.

Section 127.402(d)(8)(D) was amended by striking the word "the" and adding the phrase "such as structured techniques, design matrix, or cost-benefit analysis" after "criteria."

The section title for §127.404 was amended to remove the roman numeral "I."

Section 127.404(c)(3) was modified by updating the course title.

The section title for §127.405 was amended to read, "Advanced Engineering Design and Presentation."

Section 127.405(b) was modified by striking the Principles of Applied Engineering prerequisite and amending the Engineering Design and Presentation course title.

Section 127.405(c)(3) was modified by updating the course titles.

Section 127.406(b) was modified by adding a recommended prerequisite or corequisite of "chemistry or physics" and striking the specific courses, "Chemistry, Physics, or Physics for Engineering."

Section 127.407(d)(3)(A) was amended by replacing the verb "compare" with the verb "analyze," inserting the word "and" after the word "Act," and striking the phrase "to the code of ethics of other engineering societies such as the American Society of Civil Engineers and the National Society of Professional Engineers to" after the word "Act."

Section 127.407(d)(9)(H) was amended to read, "research and describe emerging contaminants in water and demonstrate understanding of methods of detection, measurement techniques, degradation, assessment of risk, and strategies for mitigation and removal of contaminants."

Section 127.407(d)(10)(A) was amended to read, "explain the differences between and costs of renewable and non-renewable energy sources, providing examples of each."

New §127.407(d)(10)(B) was added to read, "describe energy density, subsidies, raw materials, the impact of energy production on land and animal life, and the environmental and resource demands of mining in relation to renewable and non-renewable energy sources."

New §127.407(d)(10)(F) was added to read, "define and identify types of intermittent and on-demand energy."

Section 127.407(d)(11)(A) was amended by adding "identify innovations and laws which have improved air quality in the United States, including bag houses, water suppression at mines, the catalytic converter, industrial scrubbers, and the Clean Air Act" and striking "describe mitigation techniques and their associated costs for air pollutants and greenhouse gas emissions."

Section 127.407(d)(11)(B) was amended by adding "human habitat and access to energy of climate and extreme weather events such as flooding, freezing temperatures, hurricanes, tornadoes, and thunderstorms" after the phrase "analyze the impact on" and striking the phrase "humans of naturally occurring extreme weather events such as flooding, hurricanes, tornadoes, and thunderstorms."

New §127.407(d)(11)(E) was added to read, "compare and analyze air quality data from different countries around the world, evaluating factors that influence air quality such as laws and use of different types of energy."

Section 127.407(d)(12)(C) was amended to read, "identify and evaluate land conservation, preservation, and restoration measures using industry practice standards, including the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Conservation Practice Standards and the Texas Railroad Commission (TRC) environmental regulations."

Section 127.407(d)(12)(E) was amended by adding "analyze and report positive and negative environmental impacts due to changes in land use, including urbanization over time, mining of rare earth minerals, and precision farming" and striking "analyze and report environmental impacts due to changes in land use such as urbanization over time."

Section 127.407(d)(13)(C) was amended by adding "explain how landfills manage waste decomposition, including the capture and potential use of gases, including methane" and striking "explain the capture and use of methane gas from landfills."

New §127.407(d)(14)(D) was added to read, "explain the role of the TRC in facilitating the restoration of mined land to its original condition."

Section 127.407(d)(15)(C) was amended by adding "identify principles that guide the development of resilient solutions that enhance quality of life, support a high standard of living, and conserve resources" and striking "identify principles that help guide development of solutions with considerations for sustainable development to include people and the planet."

Section 127.408(b) was modified by replacing the "Physics or Chemistry" prerequisite with "physics or chemistry."

Section 127.408(c)(4)-(8) relating to science were added because Fluid Mechanics satisfies a high school science graduation requirement.

Section 127.409(b) and §127.410(b) were modified by replacing "Physics" with "physics."

Section 127.411(b) and §127.413(b) were modified by removing the prerequisite of at least one credit in a course from the Engineering Career Cluster as these are Level 2 CTE courses.

Subsections (d)(2) and (3) in §127.411 and §127.413 were modified by replacing these subsections with the Levels 1 and 2 engineering design process and project management strands since the courses were adjusted to Level 2 CTE courses.

Section 127.411(d)(12)(I) was amended by inserting the phrase "explain the" before "use" and inserting the word "of" after "use."

Section 127.413(d)(11)(B) was modified by replacing the word "mechanical" with the word "aerospace."

Section 127.415(d)(16)(A) was modified by striking the phrase "and other professional organizations such as American Society of Civil Engineers, the National Society of Professional Engineers, the National Council of Examiners for Engineering and Surveying, and the National Institute of Engineering Ethics."

Section 127.415(d)(17)(B) was amended by adding "apply cost-benefit analysis to sustainability standards used throughout the project life cycle to evaluate their economic, environmental, and social trade-offs" and striking "describe sustainability standards used throughout the project life cycle."

Section 127.416(d)(16)(A) was modified by striking the phrase "and Rules" after "Act."

Section 127.418(d)(5)(F) was modified by replacing the word "sustainable" with the word "resilient."

Section 127.419(d)(13)(B) was amended by inserting the phrase "the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying" after the word "by" and striking the phrase "organizations such as the American Society of Civil Engineers, the National Society of Professional Engineers, the Texas Board of Professional Engineers and Land Surveyors, the National Council of Examiners for Engineering and Surveying, and the National Institute of Engineering Ethics."

The SBOE approved the new sections for first reading and filing authorization at its January 31, 2025 meeting and for second reading and final adoption at its April 11, 2025 meeting.

In accordance with Texas Education Code, §7.102(f), the SBOE approved the new sections for adoption by a vote of two-thirds of its members to specify an effective date earlier than the beginning of the 2025-2026 school year. The earlier effective date will allow districts of innovation that begin school prior to the statutorily required start date to implement the proposed rulemaking when they begin their school year. The effective date is August 1, 2025.

SUMMARY OF COMMENTS AND RESPONSES: The public comment period on the proposal began February 28, 2025, and ended at 5:00 p.m. on March 31, 2025. The SBOE also provided an opportunity for registered oral and written comments at its April 2025 meeting in accordance with the SBOE board operating policies and procedures. No public comments were received.

STATUTORY AUTHORITY. The new sections are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments; TEC, §28.002(j), which allows the SBOE to require by rule laboratory instruction in secondary science courses and require a specific amount or percentage of time in a secondary science course that must be laboratory instruction; TEC, §28.025(a),which requires the SBOE to determine by rule the curriculum requirements for the foundation high school graduation program that are consistent with the required curriculum under the TEC, §28.002; and TEC, §28.025(b-2)(2), which requires the SBOE to allow a student by rule to comply with the curriculum requirements for the third and fourth mathematics credits under TEC, §28.025(b-1)(2), or the third and fourth science credits under TEC, §28.025(b-1)(3), by successfully completing a career and technical education (CTE) course designated by the SBOE as containing substantially similar and rigorous content.

CROSS REFERENCE TO STATUTE. The new sections implement Texas Education Code, §§7.102(c)(4); 28.002(a), (c), and (j); and 28.025(a) and (b-2)(2).

§127.402. Engineering Design Process (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 9 and 10. Prerequisite: Algebra I. Recommended prerequisite: Principles of Applied Engineering. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupa-

tions ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Engineering Design Process is an engineering course applicable to all engineering fields. Students use an iterative engineering design process to solve problems, make decisions, and manage a project. Professional practices are addressed, including development of a problem statement, maintenance of documentation, use of an engineering notebook, research, project management, internal and external communication, and creation of technical drawings and prototypes. The student delivers a professional presentation detailing the experience of working through each step of the engineering design process.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student discusses ethics pertaining to engineering. The student is expected to identify and discuss the importance of professionalism, standards of conduct, and ethics as defined by the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying.

(2) The student understands there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define and discuss the roles of ideation and conceptualization in innovation and problem solving;

(D) explain the criteria for selecting an idea or concept for detailed prototype design, development, and testing;

(E) explain the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the relevance of experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) explain the purpose of effective communication throughout the entirety of the engineering design process to various audiences.

(3) The student explores and develops skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(4) The student understands the foundations of occupational safety and health. The student is expected to:

(A) explain and discuss the responsibilities of workers and employers to promote safety and health in the workplace and the rights of workers to a secure workplace;

(B) explain the role industrial hygiene plays in occupational safety and explain various types of industrial hygiene hazards, including physical, chemical, biological, and ergonomic;

(C) identify and explain the appropriate use of types of personal protective equipment used in industry;

(D) demonstrate safe practices for preventing or reducing slips, trips, and falls in the workplace;

(E) describe types of risks of and control methods to prevent electrical hazards in the workplace; and

(F) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and discuss how these resources are used to make decisions in the workplace.

(5) The student understands the value of maintaining documentation using an engineering notebook. The student is expected to:

(A) explain the purpose and legal value of maintaining an engineering notebook as intellectual property;

(B) describe the proper implementation of an engineering notebook, including notebook type, documentation, signatures, adding external materials, sealing, and dating;

(C) create and maintain an engineering notebook by recording ideas, notes, decisions, findings, deficiencies, and corrections throughout the entire design process; and

(D) communicate progress during the engineering design process at regular intervals using various methods such as written reports, informal presentations, and formal presentations.

(6) The student understands how to conduct research in the engineering design process. The student is expected to:

(A) describe the advantages and disadvantages of emerging technologies and practices in the research process;

(B) explain the importance of identifying and synthesizing information from a variety of sources in the research process;

(C) explain the ethical acquisition and use of digital information;

(D) demonstrate use and citation of source material ethically and appropriately;

(E) define and discuss intellectual property laws such as patent, copyright, and trade secret law and their role in protecting proprietary information in the research process; and

(F) identify limitations in information and research such as outdated, conflicting, proprietary, or limited access.

(7) The student understands the process of creating and refining a problem statement in the engineering design process. The student is expected to:

(A) explain the essential components of a problem statement such as who the problem affects, when it is a problem, where the problem happens, and the magnitude of the problem;

(B) describe different methods for creating and refining a problem statement such as questioning, observation, and client needs;

(C) create a problem statement that is concise, specific, and measurable;

(D) collect, analyze, and interpret information relevant to a problem statement;

(E) modify a problem statement based on information acquired from using processes or various analysis tools such as fishbone charts, root-cause analysis, 80-20 rule, heat maps, survey results, and end-user input;

(F) explain the purpose of a technical document such as a design brief or design basis that compiles the objectives, constraints, data, alternatives, and design solutions in the engineering design process; and

(G) compile a technical document that includes a problem statement, constraints, resources, budget, timeline, deliverables, and solution criteria such as quality, risk, and extent to which problem is solved.

(8) The student understands the importance of conceptualizing a solution in the engineering design process. The student is expected to:

(A) discuss the importance of creativity in engineering, innovation, and problem solving;

(B) explain and use various techniques for idea generation such as brainstorming, mapping, storyboarding, sketching, questioning, reverse engineering, and natural solutions to create solution concepts;

(C) explain the similarities and differences between designing a solution in the classroom versus designing a solution in the real world;

(D) analyze and evaluate solutions using established criteria such as structured techniques, design matrix, or cost-benefit analysis;

(E) explain the importance of capturing client feedback to refine solution concepts; and

(F) explain and use various techniques for gathering end-user input such as focus groups, interviews, and surveys to refine solution concepts.

(9) The student creates technical drawings in the engineering design process. The student is expected to:

(A) explain the role of freehand sketching, freehand modeling, technical drawing, and technical modeling in the development of a prototype or solution;

(B) create nontechnical representations such as sketches, drawings, or models of a solution with relevant annotations;

(C) develop a technical model of the solution using a nontechnical representation of a solution; and

(D) create technical drawings, including single-view projections, multi-view projections, and orthographic views, using industry standards.

(10) The student creates prototypes in the engineering design process. The student is expected to:

(A) identify different types of prototypes and explain the role of a prototype in the development of a solution;

(B) identify and describe the steps needed to produce a prototype;

(C) identify and use appropriate tools, equipment, machines, and materials to produce a prototype; and

(D) present a prototype using presentation software.

(11) The student tests and evaluates a prototype or solution using experiments, data, and end-user feedback. The student is expected to:

(A) explain the purpose of conducting tests on a prototype or solution;

(B) design appropriate protocols for testing a prototype or solution;

(C) analyze, evaluate, and critique a prototype or solution by using observational testing, experimental testing, empirical evidence, and statistical analysis;

(D) collect end-user feedback using appropriate protocols such as focus groups, interviews, and surveys to evaluate a prototype or solution; and

(E) identify the successes and failures of a prototype or solution based on the criteria established in the testing protocols and technical document to determine next steps in the engineering design process.

(12) The student understands the iterative nature of the engineering design process to develop a solution. The student is expected to:

(A) analyze design flaws of a prototype or solution using various tools such as fishbone charts, root-cause analysis, 80-20 rule, heat maps, survey results, and end-user feedback;

(B) iterate steps of the design process, as necessary, to improve and optimize a solution; and

(C) evaluate the potential impact of a solution on the original problem identified during the design process.

(13) The student prepares and delivers a professional presentation detailing the experience of working through each step of the engineering design process to create a viable solution. The student is expected to:

(A) prepare and deliver a presentation detailing the experience of working through each step of the engineering design process to create a viable solution;

(B) solicit and evaluate feedback on implementation of the design process and the presentation; and

(C) present learning experiences such as essential skills gained, areas of personal growth, and challenges encountered throughout the design process.

§127.403. Programming for Engineers (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Prerequisite: Algebra I and Principles of Applied Engineering, Physics for Engineering, Introduction to Computer-Aided Design and Drafting, or Introduction to Engineering Design. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Programming for Engineers focus on understanding, writing, evaluating, and troubleshooting code to solve engineering problems. Students use the engineering process and computational thinking to write computer programs for real-world solutions. Students explore autonomous systems, sensors, and careers to integrate computational thinking within their engineering mindset. Students spend at least 40% of the instructional time completing hands-on, real-world projects.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(4) Computational thinking--foundations. The student explores the core concepts of computational thinking related to engineering solutions, a set of problem-solving processes that involve decomposition, pattern recognition, abstraction, and algorithms. The student is expected to:

(A) decompose real-world engineering problems into structured parts by using visual representation;

(B) analyze and use industry-specific symbols, patterns, and sequences found in visual representations such as flow-charts, pseudocode, concept maps, or other representations of data;

(C) define and practice abstraction in the context of writing a program to solve an engineering problem;

(D) design a plan using visual representation to document a problem, possible solutions, and an expected timeline for the development of a coded engineering solution;

(E) analyze different techniques used in debugging and apply them to an algorithm;

(F) analyze the benefits of using iteration such as code and sequence repetition in algorithms, including loops and functions;

(G) define and analyze Boolean expressions;

(H) define and analyze conditional statements;

(I) write code that uses conditional statements such as (if), (then), (while), and (else);

(J) compare the differences between scripting and programming languages such as interpretation versus compiling; and

(K) identify and demonstrate when to use a compiler and editor for programming design.

(5) Computational thinking--applications. The student applies the fundamentals of programming within the context of engineering. The student is expected to:

(A) analyze how programming parallels iterative design within the engineering design process such as problem solving and critical thinking illustrated in an engineering notebook;

(B) modify previously written code and implement the modified code to develop improved programs;

(C) solve an engineering problem by creating block-based or text-based programs that include sequences, functions, loops, conditionals, and events;

(D) identify and label variables that relate to a program or algorithm;

(E) manipulate and rename variables and describe different data types;

(F) write comments while coding programs for engineering solutions to enhance readability and functionality such as descriptive identifiers, internal comments, white space, spacing, punctuation, indentation, and standardized programming style;

(G) write code that uses comparison operators such as greater than, less than, equal to, and modulus to perform mathematical computations;

(H) write code that uses strings to sort different data types such as Boolean operators, floats, and integers; and

(I) perform user testing on code to assess and improve a program.

(6) The student understands physical computing systems to integrate input and output functions in engineering concepts. The student is expected to:

(A) write programming to process data and control physical devices for efficient and optimized solutions;

(B) apply coding to demonstrate the correct operation of the output device such as motors, video displays, speakers, rapid prototype machines, and lights;

(C) apply coding to demonstrate the correct operation of the input device such as buttons, sensors, and switches;

(D) apply critical problem-solving skills to troubleshoot any errors and miscommunication such as wiring, code, and physical hardware;

(E) apply basic circuit theory as it pertains to ground and power systems for diagramming input and output devices and use tools such as a multimeters, microcontrollers, sensors, and LEDs; and

(F) use script writing to develop engineering solutions such as automatic data collecting, data analysis, programmable logic controllers, power system programming, robotics, and scripting for commercial engineering related software.

(7) The student understands the roles of sensors and programming sensors in engineering. The student is expected to:

(A) describe how sensors were used in the past and are used currently in real-world engineered products, including innovative applications for sensors;

(B) identify the proper input sensors to measure light, distance, sound, and color such as photoresistors, thermistors, sonar, switches, and buttons;

(C) identify the specifications of sensors and other input devices used in engineering problems, including units of measurement, upper limits, lower limits, and errors;

(D) select the proper sensor and defend the choice in developing a solution to an engineering problem;

(E) write code that will control sensors and accurately collect relevant information pertaining to the function of sensors;

(F) debug, asses, and test code to evaluate and improve sensor performance; and

(G) document the steps of sensor integration in an engineering notebook using flowcharts or technical drawings.

(8) The student understands how automation plays a role in engineering and manufacturing. The student is excepted to:

(A) research and explain how automated machines are used in engineering and manufacturing;

(B) research and explain different job roles and required level of education in the field of automation;

(C) compare the roles of engineers, technicians, and technologists in automation;

(D) describe the role of safety and ethics related to the use of automation within engineering; and

(E) convert a manual mechanical system to an automated system using code and hardware.

(9) The student uses appropriate tools and demonstrates safe work habits. The student is expected to:

(A) demonstrate lab safety as prescribed by the instructor in compliance with local, state, and federal regulations;

(B) recognize the classification of hazardous materials and wastes;

(C) dispose of hazardous materials and wastes appropriately;

(D) describe the implications of negligent or improper maintenance of tools in engineering solutions;

(E) demonstrate the use of precision measuring instruments;

(F) analyze a circuit design and identify specific areas where quality, reliability, and safety features can be implemented; and

(G) identify governmental and organizational regulations for health and safety in the workplace related to electronics.

§127.404. Engineering Design and Presentation (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I and at least one credit in a course from the Engineering Career Cluster. Recommended prerequisite: Principles of Applied Engineering. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for

students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Engineering Design and Presentation demonstrate knowledge and skills of the design process as it applies to engineering fields and project management using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Through implementation of the design process, students transfer advanced academic skills to component designs. Additionally, students explore career opportunities in engineering, technology, and drafting and learn what is required to gain and maintain employment in these areas.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student understands the value of maintaining documentation using an engineering notebook. The student is expected to:

(A) explain the legal value of maintaining an engineering notebook as intellectual property;

(B) describe the proper implementation of an engineering notebook, including notebook type, documentation, signatures, adding external materials, sealing, and dating; and

(C) create and maintain an engineering notebook by recording ideas, notes, decisions, findings, and corrections.

(4) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(5) The student gains knowledge of and demonstrates the skills necessary for success in the engineering workplace. The student is expected to:

(A) describe and compare the roles of an industry technician, engineering technologist, and engineer;

(B) identify educational requirements and career opportunities for engineers, engineering technologists, and industry technicians;

(C) research and describe various engineering disciplines such as mechanical, civil, aerospace, biomedical, chemical civil, computer, electrical, petroleum, and other related and emerging fields;

(D) investigate and describe the requirements of engineering licensure and industry-based certifications;

(E) investigate and describe elements of teamwork critical for success in the engineering and technology industries such as communication, active listening, and time management;

(F) research and describe industry standards and governmental regulations such as health and safety and environmental regulations applicable to a design problem; and

(G) analyze and discuss ethical issues related to engineering and technology.

(6) The student understands the roles and responsibilities of individual team members, how successful teams function, and how to constructively contribute to the team. The student is expected to:

(A) describe the various roles and responsibilities of a project team;

(B) identify the strengths of individual team members to assign roles and distribute tasks within a team; and

(C) describe and demonstrate appropriate behaviors such as active listening and clear communication while serving as a team leader and member on projects.

(7) The student practices safe and proper work habits. The student is expected to:

(A) identify and explain the appropriate use of types of personal protective equipment used in industry;

(B) explain and comply with safety guidelines and procedures as described in relevant manuals, instructions, and regulations;

(C) discuss the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(D) describe the various types of electrical hazards in the workplace and the risks associated with electrical hazards;

(E) describe the various control methods to prevent electrical hazards in the workplace;

(F) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and explain how emergency plans and Safety Data Sheets are used to make decisions in the workplace;

(G) describe the appropriate disposal of selected hazardous materials and wastes;

(H) perform routine maintenance on selected tools, equipment, and machines;

(I) demonstrate proper handling, use, and storage of tools and materials; and

(J) research and describe the consequences of negligent or improper equipment maintenance.

(8) The student understands how visual and spatial reasoning applies to engineering design. The student is expected to:

(A) describe and compare characteristics and dimensional changes of two-dimensional (2D) and three-dimensional (3D) figures;

(B) draw and manipulate geometric shapes in three dimensions;

(C) create 2D views of a 3D object; and

(D) explain the symmetry of figures through the proportionate transformation of objects.

(9) The student uses sketching and computer-aided design and drafting (CADD) to represent 3D objects in a 2D format needed for manufacturing an object. The student is expected to:

(A) use single and multi-view projections to represent 3D objects in a 2D format;

(B) use appropriate line types in engineering drawings to represent 3D objects in a 2D format;

(C) use orthographic and pictorial views to represent 3D objects in a 2D format;

(D) use auxiliary views to represent 3D objects in a 2D format;

(E) use section views to represent 3D objects in a 2D format;

(F) prepare and revise annotated multi-dimensional production drawings in computer-aided design and drafting to industry standards;

(G) apply best practices for file structure and management to efficiently retrieve and edit files;

(H) use advanced dimensioning techniques, including annotation scale; and

(I) construct and use CADD drawings to develop a model or prototype for presentation.

(10) The student designs products using appropriate engineering design processes and techniques. The student is expected to:

(A) design product components using a variety of technologies;

(B) research and analyze the applications of different types of CADD software for various engineering problems;

(C) create and interpret engineering drawings using industry standards;

(D) describe how quality, reliability, and safety can be designed into specific products;

(E) identify specific requirements of users with special needs and modify a product design to accommodate users with special needs;

(F) research and explain the patenting process and analyze opportunities for potential patents related to a project; and

(G) use multiple software applications for concept presentations.

(11) The student builds a prototype(s) using the appropriate tools, materials, and techniques. The student is expected to:

(A) identify and describe the steps needed to produce a prototype;

(B) identify and use appropriate tools, equipment, machines, and materials to produce the prototype;

(C) present the prototype and explain how the prototype meets the project requirements; and

(D) evaluate the successes and failures of the prototype(s) in the context of an iterative design process.

(12) The student creates justifiable solutions to open-ended real-world problems using engineering design practices and processes. The student is expected to:

(A) identify and define an engineering problem;

(B) formulate goals, objectives, and requirements to solve an engineering problem;

(C) investigate and select appropriate materials for a particular product to be designed;

(D) explain the importance of manufacturability and maintainability when designing a product;

(E) determine design constraints such as personnel, resources, funding, feasibility, and time associated with an engineering problem;

(F) identify requirements, including health, safety, social, environmental, ethical, regulatory, and legal constraints, defining an engineering problem;

(G) identify alternative solutions to a problem using a variety of techniques such as brainstorming, reverse engineering, and researching engineered and natural solutions;

(H) test and evaluate proposed solutions using engineering practices such as experiments, simulations, statistical analysis, and critical design review; and

(I) select and justify a preferred solution to a problem using structured techniques such as a decision tree, design matrix, or cost-benefit analysis.

(13) The student presents a solution derived through the engineering design process. The student is expected to:

(A) present the solution in a professional manner;

(B) solicit and evaluate feedback on the solution and presentation; and

(C) present learning experiences, including essential skills gained, areas of personal growth, challenges, and solutions, encountered throughout the design process.

§127.405. Advanced Engineering Design and Presentation (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Algebra I, Geometry, and Engineering Design and Presentation. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Advanced Engineering Design and Presentation is a continuation of knowledge and skills learned in Engineering Design and Presentation. Students enrolled in this course demonstrate advanced knowledge and skills of a system design process as it applies to engineering fields and project management using multiple software applications and tools necessary to produce and present working drawings, solid model renderings, and prototypes. Students expand on the use of a variety of computer hardware and software applications to complete assignments and projects. Through implementation of a system design process, students transfer advanced academic skills to component designs and engineering systems. Emphasis is placed on transdisciplinary and integrative approaches using skills from ideation, prototyping, and project management methods.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how interested parties impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule, influence an engineering design, and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(4) The student practices safe and proper work habits. The student is expected to:

(A) identify and explain the appropriate use of types of personal protective equipment used in industry;

(B) explain and comply with safety guidelines and procedures as described in relevant manuals, instructions, and regulations;

(C) explain the importance of lock out tag out (LOTO) procedures in preventing the release of hazardous energy;

(D) explain the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(E) describe the various types of electrical hazards in the workplace and the risks associated with electrical hazards;

(F) describe the various control methods to prevent electrical hazards in the workplace;

(G) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and explain how health and safety resources are used to make decisions in the workplace;

(H) describe the appropriate disposal of selected hazardous materials and wastes;

(I) perform routine maintenance on selected tools, equipment, and machines;

(J) handle, use, and store tools and materials correctly; and

(K) research and describe the consequences of negligent or improper equipment maintenance.

(5) The student demonstrates the roles and responsibilities of individual team members, how successful teams function, and how to constructively contribute to the team. The student is expected to:

(A) demonstrate the various roles and responsibilities of a project team;

(B) create a plan to improve team member's skillsets based on strengths of individual team members;

(C) demonstrate appropriate behaviors of a successful team such as active listening, development of consensus, and clear communication while serving as a team leader and member on projects; and

(D) describe and demonstrate the roles and responsibilities specific to team leaders such as assigning roles and responsibilities, facilitating decision making, tracking progress, and soliciting and providing timely feedback to team members.

(6) The student uses and documents engineering design processes. The student is expected to:

(A) use idea generation techniques such as brainstorming, sketching, rapid prototyping, and mind mapping during conceptual stages and for resolving problems of an engineering project;

(B) analyze and evaluate solution constraints;

(C) develop or improve a solution using evidence-based decision-making;

(D) compare solutions using analysis tools such as a decision matrix or paired comparison analysis;

(E) create and maintain an organized engineering notebook to record findings and corrections, including deficiencies in the design process and decisions throughout the entire design process; and

(F) develop an engineering notebook or portfolio to record and justify the final design, construction, and manipulation of finished projects.

(7) The student understands how systems impact the design, integration, and management of engineering solutions. The student is expected to:

(A) analyze and document systems such as electrical, mechanical, or information processes within a product or design concept in engineering;

(B) explain ethical reverse engineering;

(C) reverse engineer a multi-system product and explain how the systems work together; and

(D) modify a system design to meet a newly identified need or to improve performance.

(8) The student demonstrates proficiency using computer-aided design and drafting (CADD) software as part of the engineering design process. The student is expected to:

(A) research and explain the features and benefits of different types of CADD software applications for use in design systems and problem solving;

(B) identify and describe industry graphic standards such as American National Standards Institute (ANSI) and International Organization for Standardization (ISO) standards;

(C) create drawings that meet industry standards using CADD software;

(D) customize CADD software user interface options such as buttons, tabs, and ribbons to match different digital work environments;

(E) prepare and use advanced views such as auxiliary, section, and break-away using CADD software;

(F) draw detailed parts, assembly diagrams, and sub-assembly diagrams using CADD software;

(G) indicate tolerances and standard fittings using appropriate library functions within CADD software;

(H) setup and apply annotation styles by defining fonts, dimension styles, and leader lines using CADD software;

(I) identify and incorporate the use of advanced layout techniques and viewports using paper-space and modeling areas using CADD software;

(J) create and use layers to organize objects in drawings using CADD software;

(K) create and use custom templates using CADD software for advanced project management;

(L) use advanced polar tracking and blocking techniques using CADD software to increase drawing efficiency;

(M) create drawings that incorporate external referencing using CADD software;

(N) create and render objects using parametric modeling tools within CADD software; and

(O) model individual parts or assemblies and produce rendered or animated output using CADD software.

(9) The student builds a prototype using the appropriate tools, materials, and techniques. The student is expected to:

(A) delineate and implement the steps such as defining the problem and generating concepts needed to produce a prototype;

(B) develop a prototype safely using tools, equipment, machines, or precision measuring instruments;

(C) select and justify the use of materials for prototyping and manufacturing;

(D) describe how design quality concepts, including performance, usability, accessibility, reliability, and safe use, affect prototype development;

(E) document quality-control requirements in the design and production of a prototype;

(F) evaluate prototype quality and performance to meet design criteria;

(G) fabricate a prototype using a systems engineering approach to compare the actual prototype performance to the required performance; and

(H) present a prototype and explain how the prototype meets the project requirements.

(10) The student creates justifiable solutions to open-ended real-world problems within a multitude of engineering disciplines us-

ing engineering design practices and processes. The student is expected to:

(A) identify and define a multi-system engineering problem requiring a complex solution from different engineering disciplines such as aerospace, biomedical, chemical, civil, electrical, industrial, mechanical, petroleum, robotics, or structural engineering;

(B) formulate and document goals, objectives, and requirements to solve a multi-system engineering problem;

(C) determine the design constraints such as materials, personnel, resources, funding, manufacturability, feasibility, and time associated with a multi-system engineering problem;

(D) identify parameters, including health, safety, social, environmental, ethical, regulatory, and legal constraints, defining a multi-system engineering problem;

(E) identify or create alternative solutions to a multi-system engineering problem using a variety of techniques such as brainstorming, reverse engineering, and researching engineered and natural solutions;

(F) test and evaluate proposed multi-system engineering solutions using tools such as models, prototypes, and mockups and methods such as simulations, critical design review, statistical analysis, and experiments; and

(G) select and justify a preferred solution to a multi-system engineering problem using a structured technique such as a decision tree, design matrix, or cost-benefit analysis.

(11) The student presents a solution derived through the engineering design process. The student is expected to:

(A) develop and deliver a presentation describing the solution to a multi-system engineering problem in a professional manner to an appropriate audience such as peers, educators, potential clients, potential employers, community members, or engineering professionals;

(B) solicit and evaluate feedback from the audience on the multi-system engineering solution and presentation; and

(C) present learning experiences, including essential skills gained, areas of personal growth, challenges, and solutions encountered throughout the design process for a multi-system engineering solution.

§127.406. Engineering Design and Problem Solving (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisites: Algebra I, Geometry, and at least one credit in a Level 2 or higher course in the Engineering Career Cluster. Recommended prerequisites or corequisites: Engineering Science, chemistry, or physics. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) The Engineering Design and Problem Solving course extends students' problem solving skills by identifying needs and then devising solutions using scientific and engineering practices. Students apply prior knowledge to develop a multi-system product or solution for a complex problem. Students demonstrate project management skills by collaborating as part of a team, conducting research, and analyzing data that culminates in a comprehensive report and presentation. Technical drawings, models, and prototypes are created using the appropriate tools, materials, and techniques. Structured decision-making processes are used to select and justify a preferred, multi-system solution to an authentic problem. Students develop, implement, and document repeated trials of experiments and tests using scientific and engineering practices to determine whether a prototype meets design requirements.

(4) Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not currently scientifically testable.

(5) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide a tool for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as dial caliper, micrometer, protractor, compass, scale rulers, multimeter, and circuit components;

(E) collect quantitative data using the International System of Units (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using spreadsheets, engineering notebooks, graphs, and charts;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(3) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(4) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(5) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of various scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field.

(6) The student understands how to implement an engineering design process to develop a multi-system product or solution for a complex problem. The student is expected to:

(A) implement the stages of an engineering design process to construct a model of a multi-system product or solution;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, affect stages of the engineering design process;

(C) explain how interested parties affect an engineering design process; and

(D) discuss how lessons learned from failure is often an essential component of the engineering design process.

(7) The student explores and implements the methods and aspects of project management for complex, multi-phase, multi-system projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) create a resource-loaded project schedule for an engineering project;

(D) maintain a resource-loaded project schedule for the life of an engineering project;

(E) develop and implement a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(F) describe how project requirements, constraints, and deliverables affect the project schedule and influence and are influenced by an engineering design;

(G) create a budget that includes materials, equipment, and labor for an engineering project;

(H) describe the importance of management of change (MOC) and how MOC applies throughout the life of an engineering project;

(I) create and implement a project management plan for an engineering project; and

(J) describe how techniques such as Monte Carlo simulation, risk matrices, and tornado diagrams are used to evaluate risk.

(8) The student conducts research and analyzes data to create a problem statement in the engineering design process. The student is expected to:

(A) create an organized engineering notebook to record research and findings for an engineering project;

(B) select an open-ended real-world problem that can be solved using scientific and engineering practices and the engineering design process;

(C) collect, organize, analyze, and summarize scientific and technical articles, data, and information to support the development of a problem statement;

(D) define and use relevant scientific and engineering vocabulary as it relates to the problem statement;

(E) evaluate information from sources for quality, accuracy, completeness, and reliability and conduct additional research as appropriate in the context of an iterative design process; and

(F) create a problem statement that is concise, specific, and measurable.

(9) The student identifies potential solutions and uses structured techniques to select and justify a preferred solution using scientific and engineering practices and the engineering design process. The student is expected to:

(A) identify or create alternative solutions to a problem using a variety of techniques such as sketching, brainstorming, reverse engineering, and researching engineered and natural solutions;

(B) select a preferred solution to a problem by applying structured techniques such as a decision tree, design matrix, or cost-benefit analysis;

(C) evaluate whether the preferred solution meets the requirements of the problem statement in the context of an iterative design process;

(D) identify material properties that are important to the solution design such as physical, mechanical, chemical, electrical, and magnetic properties and explain how material properties affect material selection;

(E) explain how different engineering solutions can have significantly different effects on individuals, society, and the natural world; and

(F) document concepts, solutions, findings, and structured decision-making techniques in the engineering notebook.

(10) The student creates technical drawings, models, and prototypes using the appropriate tools, materials, and techniques. The student is expected to:

(A) determine and explain the type of technical drawing that best represents the solution;

(B) create a technical drawing(s) that includes dimensions, scale, views, annotations, tolerances, legends, symbols, and material specifications;

(C) create a mathematical or physical model(s) to make predictions, identify limitations, and optimize design criteria;

(D) create a prototype for testing;

(E) evaluate the successes and failures of the prototype(s) in the context of an iterative design process; and

(F) revise technical drawings, models, and prototype(s) as the solution evolves to better meet objectives.

(11) The student develops, implements, and documents repeated trials of experiments and tests using scientific and engineering practices to determine whether a prototype meets design requirements. The student is expected to:

(A) design and conduct experiments and tests to determine whether the prototype meets the requirements of the problem statement;

(B) document and evaluate quantitative and qualitative data obtained through experiments and tests of the prototype in the engineering notebook;

(C) create and analyze charts, data tables, or graphs to organize information collected during experiments on the prototype;

(D) determine acceptable limits of error in data from experiments and tests of the prototype;

(E) explain the purpose of regression analysis as a method to model and investigate relationships between independent and dependent variables from experiments and tests of the prototype;

(F) identify linear and nonlinear relationships in data and situations where regression is appropriate;

(G) identify sources of random error and systematic error and differentiate between both types of error from experiments and tests of the prototype; and

(H) evaluate and determine whether the prototype meets the requirements of the problem statement by analysis of data collected in the context of an iterative design process.

(12) The student develops and presents a comprehensive report that describes the problem, research and information collected

and analyzed, concepts and solutions considered, prototypes developed and tested, and final results. The student is expected to:

(A) create and present the comprehensive report in a professional manner to an appropriate audience such as peers, educators, potential clients, potential employers, community members, or engineering professionals;

(B) solicit and evaluate feedback from the audience on the comprehensive report and presentation;

(C) present learning experiences such as essential skills gained, areas of personal growth, and challenges and solutions encountered throughout the design process; and

(D) predict the local and global impacts or risks of an engineering solution to segments of the society such as the economy or the environment.

§127.407. Environmental Engineering (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisites: At least one credit in a course from the Engineering or Energy Career Cluster. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) In Environmental Engineering, students research, develop, and design solutions related to water, land, and energy problems, with consideration to ethics and regulations. Using technology and the engineering design process, students devise innovative solutions to address current and future engineering challenges.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations, organizations that foster leadership and career development in the profession such as student chapters of related professional associations, and work-based experiences.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(2) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(3) Engineering ethics. The student applies ethical consideration to analyze resilient engineered systems. The student is expected to:

(A) analyze the Texas Engineering Practices Act and explain how engineers demonstrate the responsibility they have to serve the public interest, their clients, and the profession with a high degree of honesty, integrity, and accountability;

(B) research the New London school explosion and explain how this event led to the development of the Texas Engineering Practice Act and other regulations such as odorization of natural gas;

(C) evaluate and explain an engineering ethical dilemma between environmental considerations and the needs and wants of society; and

(D) explain how engineering solutions can have significantly different impacts on an individual, society, and the natural world.

(4) Models. The student builds a model using the appropriate tools, materials, and techniques. The student is expected to:

(A) identify and describe the steps needed to produce a model of a system such as hydrological, watershed management, or geospatial analysis models;

(B) identify advantages and limitations of models such as size, scale, properties, and materials;

(C) identify and use appropriate tools, equipment, and materials to produce a model;

(D) describe the use of a model to accurately represent the key aspects of a physical system, including the identification of constraints such as cost, time, or expertise, that may influence the selection of a model;

(E) develop a design proposal using a variety of media to produce a model; and

(F) evaluate the successes and failures of a model in the context of an iterative design process.

(5) Critical and creative problem-solving. The student examines environmental challenges and gathers assumptions to synthesize a meaningful, well-defined problem and ideates multiple solutions. The student is expected to:

(A) collect, analyze, and interpret information relevant to an environmental engineering problem;

(B) document a design process according to best practices in an engineering notebook;

(C) identify and define visual, functional, and design requirements with realistic constraints against which solution alternatives can be evaluated;

(D) list potential appropriate criteria for a defined problem that may impact the success of a design solution such as economic, environmental, ethical, health and safety, technical feasibility, and design;

(E) represent concepts using a variety of visual tools such as sketches, graphs, and charts to communicate the details of an idea;

(F) develop, design, and test alternatives to generate valid quantitative data to inform decision making and demonstrate solutions; and

(G) explain why there are often multiple viable solutions.

(6) Critical and creative problem-solving. The student selects the optimal design solution for real-world environmental problems based on engineering judgement. The student is expected to:

(A) evaluate competing solutions paths using a decision matrix to compare solutions based on design criteria;

(B) formulate a risk analysis matrix using a spreadsheet to evaluate threats and opportunities, including cost, time, and environmental impacts;

(C) identify data needed to address an environmental engineering research question and the appropriate tools necessary to collect, record, analyze, and evaluate the data; and

(D) evaluate evidence and arguments to identify deficiencies, limitations, and biases for appropriate next steps in the pursuit of a better solution.

(7) Engineering tools and technology. The student uses a variety of techniques to measure and report quantities appropriate for an environmental analysis. The student is expected to:

(A) research and determine appropriate units of measure, including acres, miles, and hectares, for environmental analysis;

(B) measure and estimate a large-scale area such as a wetland, streamline, or floodplain using maps or digital resources;

(C) perform dimensional analysis and unit conversions to transform data to units appropriate for a particular purpose or model; and

(D) select and effectively use appropriate tools for accurately measuring specific volumes.

(8) Water resources. The student analyzes environmental factors related to safe drinking water. The student is expected to:

(A) research and describe the Texas State Water Plan, including the sources of water, floodplain management, and recycling;

(B) analyze the relationship between population growth and water resources;

(C) describe how human health is affected by the quality of drinking water sources;

(D) describe and compare the most common sources of drinking water such as desalination, aquifers, surface water, and reclaimed water in developed and developing countries;

(E) explain the characteristics of potable water;

(F) describe common sources of drinking water contamination, including stormwater runoff;

(G) explain contaminant cycling through an ecosystem; and

(H) describe the infrastructure components of private wells and public drinking water systems.

(9) Water quality. The student evaluates water quality and uses a variety of chemical and biological assays to describe water quality. The student is expected to:

(A) research and describe Environmental Protection Agency (EPA) and Texas Commission on Environmental Quality (TCEQ) surface water quality standards for rivers, lakes, and estuaries;

(B) research and describe annual water quality compliance reports and compare water quality between the different reports;

(C) explain how water quality is quantitatively measured using chemical and biologically based testing processes;

(D) perform and analyze a culture assay to detect coliform in water;

(E) collect a water sample and determine water turbidity and pH;

(F) outline the stages of treatment that a typical septic system and modern sewage treatment plant use to treat sewage water;

(G) explain the role of bacteria in wastewater treatment;

(H) research and describe emerging contaminants in water and demonstrate understanding of methods of detection, measurement techniques, degradation, assessment of risk, and strategies for mitigation and removal of contaminants;

(I) describe the interacting roles of bacteria, protozoa, and rotifers in a wastewater treatment ecosystem;

(J) describe and provide examples of how physical, chemical, and biological processes work in the process of purifying contaminated water;

(K) explain how plants remove nitrates from contaminated water;

(L) use the engineering design process to design, build, and test a water filtration system;

(M) design and perform an experiment to use phytoremediation to remove contaminants from water; and

(N) design and conduct a scientific experiment to test a variable affecting the bacteria's ability to decompose oil.

(10) Energy. The student demonstrates a working knowledge of various sources of energy and their environmental and economic impact. The student is expected to:

(A) explain the differences between and costs of renewable and non-renewable energy sources, providing examples of each;

(B) describe energy density, subsidies, raw materials, the impact of energy production on land and animal life, and the environmental and resource demands of mining in relation to renewable and non-renewable energy sources;

(C) identify and measure the amount and types of energy that students use in their daily lives;

(D) compare the fuel efficiency of various fuel sources;

(E) analyze the results of software simulations and models that vary the amounts and types of energy used to predict future energy needs;

(F) define and identify types of intermittent and on-demand energy;

(G) perform a full life cycle assessment (LCA) of material and energy sources; and

(H) identify the variables and the methods for completing an LCA.

(11) Engineering resilient systems. The student understands the environmental impacts to infrastructure systems and the need to support system performance with resilient solutions. The student is expected to:

(A) identify innovations and laws which have improved air quality in the United States, including bag houses, water suppression at mines, the catalytic converter, industrial scrubbers, and the Clean Air Act;

(B) analyze the impact on human habitat and access to energy of climate and extreme weather events such as flooding, freezing temperatures, hurricanes, tornadoes, and thunderstorms;

(C) research and explain how engineering design can be more resilient to environmental impacts to limit additional impacts to the natural environment;

(D) research and explain elements of natural environmental resilience; and

(E) compare and analyze air quality data from different countries around the world, evaluating factors that influence air quality such as laws and use of different types of energy.

(12) Land management. The student understands land management and land management practices. The student is expected to:

(A) explain the value of a healthy ecosystem and the impact of biodiversity on the environment;

(B) research and explain ecological value of the land such as direct products and provisioning, regulating, supporting, and cultural services;

(C) identify and evaluate land conservation, preservation, and restorative measures using industry practice standards, including the United States Department of Agriculture (USDA) National Resources Conservation Services (NRCS) Conservation Practice Standards and the Texas Railroad Commission (TRC) environmental regulations;

(D) research changes in land use and land cover over time using geospatial tools;

(E) analyze and report positive and negative environmental impacts due to changes in land use, including urbanization over time, mining of rare earth minerals, and precision farming; and

(F) explain the role of protected areas and lands to safeguard natural ecosystems.

(13) Waste management. The student understands the role and importance of waste management. The student is expected to:

(A) analyze the impacts of reduction, reuse, and recycling in waste management;

(B) explain the impact of individual practices of waste reduction on resource management;

(C) explain how landfills manage waste decomposition, including the capture and potential use of gases, including methane;

(D) analyze the waste breakdown cycle of various waste products that enter landfills; and

(E) research and describe hazardous waste products and impacts on the environment, including long-term storage needs and pollution.

(14) Regulations. The student understands the role of national and local standards and regulations in environmental design. The student is expected to:

(A) research and describe the functions of the EPA and U.S. Fish and Wildlife Service;

(B) research and describe the functions of the TCEQ and the Texas Parks and Wildlife Department;

(C) describe the relationship between the National Environmental Policy Act, the EPA, and TCEQ; and

(D) explain the role of the TRC in facilitating the restoration of mined land to its original condition.

(15) Future challenges in environmental engineering. The student discusses and analyzes some of the persistent environmental engineering challenges to sustain growing populations and the natural environment and improve quality of life. The student is expected to:

(A) explain why some environmental engineering challenges are persistent such as providing access to clean water, energy, sanitation, and health to growing populations;

(B) create a solution to a current challenge to meet the needs of society without compromising the ability to meet the needs of the future;

(C) identify principles that guide the development of resilient solutions that enhance quality of life, support a high standard of living, and conserve resources;

(D) describe the life cycle of a product or service and identify energy consumption, wastes, and emissions that are produced in the process.

§127.408. Fluid Mechanics (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: at least one credit in a course from the Engineering Career Cluster and physics or chemistry. Recommended prerequisite or corequisite: Algebra II. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Fluid Mechanics investigate the behavior and properties of fluids, including liquids and gasses. Through hands-on experiments, simulations, and real-world examples, students learn about concepts such as viscosity, pressure, buoyancy, and flow dynamics. Students explore how fluids interact with solid objects, understanding phenomena like lift and drag, which are critical to the operation of ships, airplanes, and vehicles. Students engage in case studies and problem-solving activities to gain insights into how fluid mechanics shape our everyday lives, technological advancements, and industrial applications. This course prepares students to progress in careers in engineering and scientific disciplines such as aerospace, mechanical, civil, chemical, materials, and physics.

(4) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside the realm of science because they deal with phenomena that are not scientifically testable.

(5) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Science and social ethics. Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide tools for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as dial calipers, protractors, scale rulers, tape measures, load cells, micrometers, scales, tensiometer, multimeter, and thermometers;

(E) collect quantitative data using the System International (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using spreadsheets, engineering notebooks, graphs, and charts;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(3) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(4) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(5) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing so as to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of various scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field.

(6) The student explains the application of fluids in historical and modern applications. The student is expected to:

(A) describe the efficient storage and transportation of fluids, including gravity flow and natural phenomena such as aqueducts, water towers, winds, and currents;

(B) explain the use of fluids in power generation and power transmission such as hydraulics, pneumatics, pumps, compressors, and turbomachinery; and

(C) explain the impact of lift and drag on a moving object.

(7) The student describes basic concepts of fluid mechanics. The student is expected to:

(A) differentiate and compare the properties that distinguish a solid from a fluid;

(B) define the characteristics of a fluid and identify different types of fluids, including gasses, liquids, Newtonian, and non-Newtonian;

(C) define and list examples of compressible and incompressible fluids;

(D) explain the properties of fluids, including density, specific weight, specific gravity, viscosity, and compressibility;

(E) describe methods to measure and calculate the density, specific weight, specific gravity, viscosity, and compressibility of a Newtonian fluid;

(F) calculate density, specific weight, and specific gravity for a variety of fluids from measured data;

(G) explain the appropriate use of material reference frames and spatial reference frames, including boundary conditions, control surfaces, and control volumes;

(H) identify and explain the variables in the ideal gas law and apply the ideal gas law to constructed problems;

(I) explain the laws of conservation of energy and conservation of mass, including the algebraic version of Reynolds transport theorem; and

(J) identify appropriate boundary conditions, including no-slip and ambient pressure boundary conditions in fluid flow.

(8) The student demonstrates an understanding of pressure and hydrostatics and calculates values in a variety of systems. The student is expected to:

(A) describe the relationship between force, area, and pressure;

(B) calculate force proportionalities in hydraulic and pneumatic cylinders using Pascal's law and explain the impact of the cylinders' diameter on the resultant force;

(C) differentiate between atmospheric pressure, gauge pressure, and absolute pressure;

(D) describe the working principles of a pressure gauge and measure fluid pressure using dial gauges and manometers;

(E) calculate the buoyant force of floating and submerged objects according to Archimedes' principle; and

(F) define and calculate hydrostatic pressure.

(9) The student demonstrates an understanding of fluid flows in steady-state pipes, channels, and free jets. The student is expected to:

(A) compare developing, fully developed, and steady-state Newtonian fluid flows in pipes and channels;

(B) compare fluid flow profiles, including uniform and parabolic;

(C) describe experimental measurements of fluid flow field lines, including stream, streak, and pathlines;

(D) calculate volumetric flow rate in a steady state system using the continuity equation and conservation of mass;

(E) explain how Bernoulli's equation relates to the total energy of a steady-state system;

(F) calculate unknown variables in varying conditions, including changes in height, velocity, and cross-sectional area of a steady state system using Bernoulli's equation and the conservation of energy;

(G) derive Torricelli's equation from Bernoulli's equation and calculate the exit velocity and mass flow rates of free jets;

(H) calculate fluid flows in pipes, channels, and free jets using the Reynolds Transport theorem and conservation of mass; and

(I) calculate the resultant force of a free jet at the outlet based on the density of the fluid, cross-sectional area, pressure, and velocity of the fluid.

(10) The student demonstrates an understanding of the effects of an object moving through a fluid. The student is expected to:

(A) differentiate turbulent and laminar flows;

(B) calculate the Reynolds number of given flows to determine if the flows are turbulent or laminar;

(C) define lift and drag as applied to fluid flows;

(D) explain the relationship between viscosity and shear force in a fluid flow;

(E) explain the variables of lift and drag formulas and how the variables relate to fluid flow; and

(F) design an experiment to measure the drag coefficient for a solid body in a fluid flow.

(11) The student understands compressible flow and the relationship between sound transmission through a fluid and fluid compression. The student is expected to:

(A) differentiate between compressible and incompressible fluids and explain the effect of compressibility on the speed of sound through a fluid;

(B) explain how density impacts the speed of sound through a fluid;

(C) calculate and use the Mach number to model a fluid as compressible or incompressible; and

(D) explain the effects on fluid, including shock waves, when the sound barrier is broken.

(12) The student designs and analyzes fluid systems. The student is expected to:

(A) explain the function of weirs in an open channel and describe an application of weirs such as flow control or flow measurement;

(B) calculate the fluid flow in open channels with different shapes, slopes, and weirs;

(C) design an application of hydrostatics using the principle of buoyancy such as a boat, submarine, floating dock, or hot air balloon;

(D) analyze and design a fluid device such as a clepsydra, water tower, pressure regulator, or nozzle using the principles of fluid dynamics;

(E) describe applications and processes of different types of pumps, including centrifugal pumps, peristaltic pumps, gear pumps, and positive displacement pumps;

(F) describe the operation of a centrifugal pump and explain the data presented in a pump curve, including head, flow rate, efficiency, and power;

(G) design a hydraulics system with components, including hydraulic fluid, pump, reservoir, motor, cylinders, valves, and flow controllers;

(H) identify and compare different types of turbomachines, including pumps and turbines;

(I) describe and differentiate the applications of turbomachines, including pumps and turbines; and

(J) explain the concept of tribology and identify the associated variables of tribology such as film thicknesses and pressures.

§127.409. Mechanics of Materials (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: at least one credit from the Engineering Career Cluster and physics. Prerequisite or corequisite: Algebra II. This course satisfies a high school science graduation requirement. Students shall be awarded one credit for the successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Mechanics of Materials describe the mechanical behavior of engineering materials, including metals, ceramics, polymers, composites, welds, and adhesives, and the applications of load, deformation, stress and strain relationships for deformable bodies, and mechanical elements relevant to engineers. The course includes axially loaded members, buckling of columns, torsional members, beams, and failure.

(4) Nature of science. Science, as defined by the National Academy of Sciences, is the "use of evidence to construct testable explanations and predictions of natural phenomena, as well as the knowledge generated through this process." This vast body of changing and increasing knowledge is described by physical, mathematical, and conceptual models. Students should know that some questions are outside

the realm of science because they deal with phenomena that are not scientifically testable.

(5) Scientific hypotheses and theories. Students are expected to know that:

(A) hypotheses are tentative and testable statements that must be capable of being supported or not supported by observational evidence. Hypotheses of durable explanatory power that have been tested over a wide variety of conditions are incorporated into theories; and

(B) scientific theories are based on natural and physical phenomena and are capable of being tested by multiple independent researchers. Unlike hypotheses, scientific theories are well established and highly reliable explanations, but they may be subject to change as new areas of science and new technologies are developed.

(6) Scientific inquiry. Scientific inquiry is the planned and deliberate investigation of the natural world using scientific and engineering practices. Scientific methods of investigation are descriptive, comparative, or experimental. The method chosen should be appropriate to the question being asked. Student learning for different types of investigations include descriptive investigations, which involve collecting data and recording observations without making comparisons; comparative investigations, which involve collecting data with variables that are manipulated to compare results; and experimental investigations, which involve processes similar to comparative investigations but in which a control is identified.

(A) Scientific practices. Students should be able to ask questions, plan and conduct investigations to answer questions, and explain phenomena using appropriate tools and models.

(B) Engineering practices. Students should be able to identify problems and design solutions using appropriate tools and models.

(7) Science and social ethics. Scientific decision making is a way of answering questions about the natural world involving its own set of ethical standards about how the process of science should be carried out. Students should be able to distinguish between scientific decision-making methods (scientific methods) and ethical and social decisions that involve science (the application of scientific information).

(8) Science consists of recurring themes and making connections between overarching concepts. Recurring themes include systems, models, and patterns. All systems have basic properties that can be described in space, time, energy, and matter. Change and constancy occur in systems as patterns and can be observed, measured, and modeled. These patterns help to make predictions that can be scientifically tested, while models allow for boundary specification and provide tools for understanding the ideas presented. Students should analyze a system in terms of its components and how these components relate to each other, to the whole, and to the external environment.

(9) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(10) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student, for at least 40% of instructional time, asks questions, identifies problems, and plans and safely conducts classroom, laboratory, and field investigations to answer questions, explain phenomena, or design solutions using appropriate tools and models. The student is expected to:

(A) ask questions and define problems based on observations or information from text, phenomena, models, or investigations;

(B) apply scientific practices to plan and conduct descriptive, comparative, and experimental investigations and use engineering practices to design solutions to problems;

(C) use appropriate safety equipment and practices during laboratory, classroom, and field investigations as outlined in Texas Education Agency-approved safety standards;

(D) use appropriate tools such as dial calipers, protractors, scale rulers, tape measures, load cells, micrometers, scales, tensometers, multimeters, and thermometers;

(E) collect quantitative data using the System International (SI) and United States customary units and qualitative data as evidence;

(F) organize quantitative and qualitative data using spreadsheets, engineering notebooks, graphs, and charts;

(G) develop and use models to represent phenomena, systems, processes, or solutions to engineering problems; and

(H) distinguish between scientific hypotheses, theories, and laws.

(3) The student analyzes and interprets data to derive meaning, identify features and patterns, and discover relationships or correlations to develop evidence-based arguments or evaluate designs. The student is expected to:

(A) identify advantages and limitations of models such as their size, scale, properties, and materials;

(B) analyze data by identifying significant statistical features, patterns, sources of error, and limitations;

(C) use mathematical calculations to assess quantitative relationships in data; and

(D) evaluate experimental and engineering designs.

(4) The student develops evidence-based explanations and communicates findings, conclusions, and proposed solutions. The student is expected to:

(A) develop explanations and propose solutions supported by data and models and consistent with scientific ideas, principles, and theories;

(B) communicate explanations and solutions individually and collaboratively in a variety of settings and formats; and

(C) engage respectfully in scientific argumentation using applied scientific explanations and empirical evidence.

(5) The student knows the contributions of scientists and engineers and recognizes the importance of scientific research and innovation on society. The student is expected to:

(A) analyze, evaluate, and critique scientific explanations and solutions by using empirical evidence, logical reasoning, and experimental and observational testing to encourage critical thinking by the student;

(B) relate the impact of past and current research on scientific thought and society, including research methodology, cost-benefit analysis, and contributions of various scientists and engineers as related to the content; and

(C) research and explore resources such as museums, libraries, professional organizations, private companies, online platforms, and mentors employed in a science, technology, engineering, and mathematics (STEM) field.

(6) The student examines the historical developments that led to the field of mechanics of materials and material science. The student is expected to:

(A) describe the contribution to the field of mechanics by historical scientists such as Pascal, Galileo, Euler, Navier, Lame, Poisson, Hooke, and Young;

(B) describe key historical advancements related to the development of different materials such as bronze, iron, steel, Damascus steel, and Roman concrete;

(C) explain how materials have influenced historical events and products such as the steel in the Titanic, the space race, and smartphones;

(D) evaluate and explain the impact of modern development of materials to manufacturing such as composites, nanotechnology, semi-conductors, and alloys and the effects of processes on materials such as subtractive manufacturing, additive manufacturing, and welding; and

(E) describe the development of shapes in architectural structures such as columns, arches, domes, keystones, and suspension bridges.

(7) The student identifies and measures different properties of an object. The student is expected to:

(A) classify properties of an object as geometric, structural, or material;

(B) identify and describe the application of tools, including rulers, calipers, micrometers, weighing scales, tensile testers (tensometers), and thermometers;

(C) measure common properties of materials, including length, width, height, and mass;

(D) measure and observe intrinsic properties of materials such as hardness, thermal conductivity, and impact resistance;

(E) calculate density, cross-sectional area, specific gravity, thermal expansion, modulus of elasticity, Poisson's ratio, bulk modulus, yield, and ultimate stress using data from a table or graph;

(F) differentiate material properties, including ductility, malleability, resilience, toughness, and reflectivity;

(G) classify material properties as geometric (extrinsic), material (intrinsic), or structural; and

(H) classify types of materials, including metals and alloys, polymers, ceramics, biomaterials, composites, and semiconductors.

(8) The student understands various manifestations of forces acting on solids. The student is expected to:

(A) illustrate forces, including axial, radial, normal, torsional, and shear and identify different units such as newtons, pounds, and kips used in force measurement;

(B) explain force intensity of distributed forces, including forces distributed over a line, area, and volume;

(C) calculate and simplify multiple loads to a single combined load;

(D) distinguish between normal forces and shear forces; and

(E) identify and calculate different types of stress, including axial stress, shear stress, and bending stress.

(9) The student evaluates the effect of temperature on the properties of a material. The student is expected to:

(A) describe engineering applications of thermo-mechanical properties such as thermometers, thermocouples, thermistors, thermostatic valves and controllers, and fuses;

(B) explain the atomic origin of thermal expansion resulting in measurable effects such as building height change and material distortion;

(C) describe potential failure modes due to thermal expansion for kinematically constrained structures;

(D) explain how to accommodate thermal expansion in construction such as buckling of railroad rails, U-runs in piping, and expansion joints; and

(E) explain the effect of temperature on the mechanical properties of materials, including modulus of elasticity, yield strength, ductility, and toughness.

(10) The student determines the material properties from different mechanical material tests and how they are graphically represented. The student is expected to:

(A) describe a tensile test, the various possible shapes of tensile testing specimens, and tensile test measurements, including force, elongation, and change in thickness;

(B) analyze data from a tensile test to calculate engineering stress and strain for various materials such as aluminum, brass, cast iron, steel, and nylon at significantly different temperatures;

(C) plot engineering stress and strain on a two-dimensional graph;

(D) identify regions of a stress-strain curve, including elastic deformation, plastic deformation, resilience, strain hardening, fracture, and tension toughness;

(E) estimate the values from a stress-strain curve, including 0.2% offset, modulus of elasticity, yield stress, ultimate stress, resilience, and tension toughness;

(F) compare and explain differences in testing plots based on differences in specimen geometry and material;

(G) compare different types of material testing, including compression tests, tensile tests, and three-point bending tests;

(H) analyze testing results from compression and three-point bending tests with different specimen geometries, including length, cross-sectional shape, and cross-sectional area; and

(I) describe modern mechanical testing such as digital image correlation, thermography, acoustic emission, and x-ray diffraction.

(11) The student analyzes the impact of the cross-sectional geometry on the second moment of area for beams and shafts. The student is expected to:

(A) calculate the area and the second moment of area for primitive shapes, including rectangles, triangles, circles, and semicircles;

(B) explain the parallel-axis theorem and use the parallel axis theorem to calculate the second moment of area for complex shapes;

(C) calculate area, centroid, and second moment of area for complex shapes composed of primitive shapes such as an H-beam, square tubes, round tubes, and angle iron; and

(D) hypothesize the best cross-sectional shape for different types of loads such as tension, compression, torsion, bending, and combinations of these loads.

(12) The student represents point and distributed forces on a sketch and calculates the maximum deflection and factor of safety of bars, cables, columns, beams, and shafts using algebraic equations. The student is expected to:

(A) describe the consequences of stresses such as elastic deformation, plastic deformation, and fracture on solid objects with mass;

(B) calculate the maximum deflection of various homogenous prismatic beams, including simply supported, cantilever, and overhang beams, using algebraic formulas;

(C) calculate the factor of safety of various homogenous prismatic beams, including simply supported, cantilever, overhang beams, and columns, using algebraic formulas;

(D) analyze the impact of cross-sectional area and length on the potential for various homogenous prismatic columns to buckle under load;

(E) explain the impact of and the reason for using a tapered object in structural applications; and

(F) describe why pre-stress is used in applications such as shot-peening, tempered glass, wheel spokes, flatbed trailers, and bridges.

(13) Students demonstrate an understanding of stress, strain, and displacement fields throughout a structure, including bars and beams. The student is expected to:

(A) identify compression and tension regions in a bent beam;

(B) describe the kinematics of a bent member, including elongation due to tension, shortening due to compression, the neutral axis, and the linear displacement profile; and

(C) identify regions of compression and tension in digital image correlation data.

(14) The student understands that the mechanics of materials are required to analyze a multi-member structure for strength and stability in real-world applications. The student is expected to:

(A) compare permanent and non-permanent joints, including welding, brazing, soldering, adhesives, bolting, screwing, and riveting joints;

(B) analyze a bolted connection for pre-stress, load, factor of safety, grade, size, yield stress, and applied torque; and

(C) design a structure to support a specified load with materials of adequate properties, size, and geometry and with an appropriate factor of safety.

§127.410. Statics (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: at least one credit in a course from the Engineering Career Cluster and physics. Prerequisite or corequisite: Algebra II.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Statics is a gateway course into most engineering majors such as aerospace, mechanical, civil, and biomedical engineering. Students learn the elements of statics that include the forces in structures that are in equilibrium and usually not moving. This includes forces calculated in two dimensions, free-body diagrams, distributed loads, centroids, and friction as applied to cables, trusses, beams, machines, gears, and mechanisms. Students explore scenarios where objects remain stationary, emphasizing the importance of balance and stability in engineering design. This course not only equips students with theoretical knowledge but also empowers them with practical skills that are indispensable in real-world engineering scenarios.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student describes milestones in structural design and construction throughout history. The student is expected to:

(A) research and evaluate the significance of pioneering structures such as the Eiffel Tower, pyramids, Roman aqueducts, ferris wheel, Sydney Opera House, and St. Louis Bridge to the field of structural design;

(B) analyze how locally available materials and technology have impacted the construction of structures through time;

(C) identify the contributions of structural design pioneers such as Archimedes, Leonardo DaVinci, Galileo, René Descartes, and Albert of Saxony; and

(D) identify careers that use the field of statics and predict the future application of statics.

(3) The student measures and converts units in the System International (SI) units and United States (US) customary systems of measurement. The student is expected to:

(A) measure objects using different units of measurement such as feet, inches, centimeters, meters, pounds force, Newtons, slugs, and kilograms in decimal and fractional measurements;

(B) apply prefixes to units of measure and convert between units in U.S. customary and SI systems such as kilograms and kips; and

(C) identify physical examples of different units of measurement, including one Newton, one pound, and one kip.

(4) The student develops an understanding of point and distributed forces and moments, including torque and couples and their respective units. The student is expected to:

(A) explain how Newton's third law of motion applies to static systems;

(B) explain the purpose and operation of mechanical components, including gears, sprockets, pulleys, and simple machines;

(C) explain how mechanical components, including gears, sprockets, pulley systems, and simple machines, are used in mechanisms;

(D) explain distributed loads and simplify distributed loads to point loads;

(E) compare a two-dimensional distributed load applied over a line to a distributed load applied over an area and a volume;

(F) calculate and use applicable units for forces, torque, distances, and mechanical advantages related to levers, gears, and pulleys;

(G) define and calculate the efficiency of mechanical systems; and

(H) identify and explain couples in a static system.

(5) The student applies vector algebra to calculate the equivalent force and moment vectors. The student is expected to:

(A) differentiate between scalar and vector quantities;

(B) identify properties of a vector, including magnitude and direction;

(C) convert forces represented graphically to vector notation;

(D) represent a force vector in its horizontal and vertical components;

(E) calculate resultant vectors from multiple vectors using a strategy, including vector addition and the parallelogram rule;

(F) simplify free-body diagrams by using strategies, including the principle of transmissibility, couples, and the summation of moments;

(G) calculate moments of a rigid body system using strategies, including multiplying force by the perpendicular distance to a specified axis and the right-hand rule;

(H) calculate moments from component forces using Varignon's principle; and

(I) apply equivalent transformation to simplify external loads in a structural system.

(6) The student locates and applies the geometric centroid and the center of mass of homogenous and heterogeneous objects. The student is expected to:

(A) explain the difference between geometric centroid and center of mass;

(B) locate the geometric centroid of simple and complex shapes using the composite parts method; and

(C) locate the center of mass for two-dimensional and three-dimensional homogeneous and heterogeneous objects.

(7) The student determines the stability of simple and complex objects with a variety of applied forces. The student is expected to:

(A) identify potential pivot points at which objects could potentially rotate leading to a tip-over;

(B) determine the stability of simple and complex objects with only frictional force using the relative location of the center of mass and the object pivot point;

(C) calculate the stability of simple and complex objects with external forces applied at different locations on the object and a reaction force caused by friction; and

(D) describe how the friction reaction forces when combined with applied forces at different locations affect the stability of an object and how to stabilize systems subject to tipping.

(8) The student differentiates supports, including fixed, pin, and roller supports, for structures. The student is expected to:

(A) define and compare the applications of different structural supports, including fixed, pin, and roller supports, and describe which support is utilized in a cantilevered beam;

(B) explain the degrees of freedom for fixed, pin, and roller supports;

(C) describe how fixed, pin, and roller supports affect a structural system; and

(D) describe and sketch the different reaction forces and moments for structural supports, including fixed, pin, and roller supports.

(9) The student constructs free-body diagrams of particles and rigid bodies around various supports and determines the reaction forces of the static body. The student is expected to:

(A) sketch a complete free-body diagram that includes applied and reaction forces for a structure;

(B) define static equilibrium;

(C) formulate translational and rotational static equilibrium equations into a system of algebraic equations; and

(D) solve for unknown forces in a structure using equations of equilibrium.

(10) The student analyzes statically determinant plane trusses. The student is expected to:

(A) test if a plane truss is statically determinant;

(B) apply the method of sections and method of joints to calculate the internal forces of a statically determinant plane truss;

(C) explain the difference between tension and compression forces;

(D) describe capabilities of members, including beams, cables, ropes, bars, and columns, to bear tension, compression, or both tension and compression;

(E) identify internal members as being in tension or compression, the members bearing the maximum loads, and the member most likely to fail; and

(F) design structures such as bridges, tensegrity structures, or trusses to support external loads.

(11) The student recognizes the limitations of a two-dimensional model. The student is expected to:

(A) identify the differences between a two-dimensional and three-dimensional system;

(B) explain the implications of adding a third dimension to a structure and how a two-dimensional analysis is insufficient to model a three-dimensional structure; and

(C) describe how a third dimension can cause instability in a structure.

§127.411. Mechanical Design I (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. Recommended corequisite: Geometry. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Mechanical Design I demonstrate knowledge and skills associated with design and manufacture of mechanical systems. Fundamental mechanisms are introduced such as gears, belts, threaded elements, and four-bar mechanisms. Basic manufacturing processes such as stamping, injection molding, casting, machining, and assembly are explored through reverse engineering. The mechanisms encountered through reverse engineering enable the exploration of product functionality. Students compare engineering choices made for components, materials, and manufacturing processes. Emphasis is placed on team collaboration and professional documentation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student discusses ethics pertaining to engineering. The student is expected to identify and discuss the importance of professionalism, standards of conduct, and ethics as defined by the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying.

(2) The student understands that there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define ideation and conceptualization and discuss the role these processes play in innovation and problem solving;

(D) explain the processes of selecting an idea or concept for detailed prototype design, development, and testing;

(E) describe the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the process of relevant experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) describe the purpose of effective communication of the engineering solution as obtained through the engineering design process to various audiences.

(3) The student explores and develops skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(4) Collaboration. The student develops teamwork skills. The student is expected to:

(A) discuss principles of critique such as describing, analyzing, interpreting, and evaluating;

(B) identify and demonstrate teamwork skills such as sensemaking where a team member recognizes another team member who requires additional clarity and then addresses the team member by providing clarity;

(C) identify methods for structuring projects such as Gantt charts, work breakdown structure, Agile, and critical path method; and

(D) discuss the importance of contributing to positive and productive group dynamics to enhance teamwork.

(5) Documentation. The student documents information gathered and interpretation developed throughout engineering processes. The student is expected to:

(A) create documents such as executive summaries, reverse engineering forms, test reports, failure documents, system black box models, engineering notebooks, and drawing packages aligned with professional industry standards;

(B) select the document format to communicate essential information to identified stakeholders; and

(C) explain and justify the structure and sequence of how information is presented in engineering documents.

(6) Applications for mechanical design. The student examines domestic, commercial, and industrial applications of mechanical design. The student is expected to:

(A) explain applications of mechanical design in various industries, including medical, aeronautical, automotive, naval, and robotics industries;

(B) research and identify commercial applications for mechanical design such as heating and cooling systems and robotics; and

(C) identify and discuss household items that are impacted by mechanical design such as environmental controls, refrigerators, washing machines, and clothes dryers.

(7) Mechanisms. The student investigates and understands mechanisms that convert motion such as gears, belts, threaded elements, linkages, or linear actuators. The student is expected to:

(A) create virtual models of physical mechanisms using appropriate tools;

(B) predict how different inputs affect the motion of a mechanism such as gears and linkages and compare the predictions with physical models;

(C) classify mechanisms into different types such as gears, belts, threaded elements, linkages, or linear actuators; and

(D) explain how changes in the dimensions of a mechanism influence the relationship between input and output.

(8) Reverse engineering. The student systematically disassembles and analyzes a system to identify the concepts involved in function and manufacture. The student is expected to:

(A) use appropriate simple tools and methods to disassemble consumer products such as can openers, mixers, or drills;

(B) document the reverse engineering process using appropriate documentation tools and methods;

(C) identify mechanisms of a product such as drive systems and gears and how their function contributes to the overall function of the product;

(D) identify elements of a product such as housings, covers, and controls and how their attributes contribute to the product;

(E) use appropriate measurement tools and methods to capture and document information about the sub-assemblies and components in a product;

(F) identify and evaluate the choice of particular materials in the elements of a product;

(G) identify and evaluate the choice of the process used to manufacture the element of a product; and

(H) identify and evaluate the choice of the process to assemble a product.

(9) Manufacturing. The student identifies different manufacturing processes such as stamping, injection molding, casting, sintering, and machining and assembly. The student is expected to:

(A) explain and compare common manufacturing processes such as stamping, casting, injection molding, and machining;

(B) identify and describe stamping manufacturing process elements such as press, tool, and blank and process steps such as shearing, bending, and perforating;

(C) identify and describe injection molding elements such as hopper, heater, platen, and mold and process steps such as heating and injecting;

(D) identify and describe casting elements such as mold, furnace, parting plane, sprue, and gate and process steps such as heating, pouring, cooling, and removal;

(E) identify and describe sintering elements such as mold, furnace, binder, and powder and process steps such as heating, pressing, cooling, and post-processing;

(F) identify and describe material removal elements such as workpiece, tool, jigs, and fixtures; the machine used such as mill, lathe, or drill; and process steps such as holding, locating, and cutting;

(G) identify and describe assembly process elements such as jigs and fixtures, tolerances, fasteners, and tools and related process steps such as locating, holding, joining, and automating; and

(H) identify and explain which material types are appropriate for manufacturing processes such as stamping, injection molding, casting, sintering, material removal, and assembly.

(10) Assembly. The student explores the assembly process. The student is expected to:

(A) explain the purposes of joining methods such as welding, adhesive bonding, fastening, riveting, and snap fitting;

(B) evaluate the choice of joining methods found in a consumer product and generate requirements based on the evaluation; and

(C) compare different assembly strategies such as assembly line, automation versus manual, or batch versus pull.

(11) Design. The student applies appropriate professional design tools. The student is expected to:

(A) define industry relevant terminology, including Failure Modes Effects Analysis (FMEA), Design for Manufacturing (DFM), Design for Assembly (DFA), Lean Manufacturing, Design of Experiments (DOE), benchmarking, reverse engineering, and Life Cycle Analysis (LCA);

(B) use design tools such as FMEA, Quality Functional Deployment (QFD), root cause analysis, five whys, or decision matrices to extract information about a reverse engineered product;

(C) develop an engineering requirements list to justify the selection of materials, processes, parts, and features from a reverse engineered product;

(D) identify opportunities for manufacturing and assembly improvement from a reverse engineered consumer product; and

(E) design and conduct tests to collect information needed to understand the engineers' design decisions, including material, manufacturing process, and mechanism choices, during a reverse engineering project.

(12) Key concepts. The student understands key concepts of mechanical engineering. The student is expected to:

(A) define heat transfer concepts such as conduction, convection, or radiation;

(B) define thermodynamic concepts such as systems boundary, conservation, or entropy;

(C) define mechanics of materials concepts such as strain, stress, elasticity, brittleness, or fatigue;

(D) define dynamics concepts such as vibrations, dampening, or spring coefficients;

(E) define material concepts such as strength, hardness, metallics, polymers, or ceramics;

(F) define fluids concepts such as mass flow rate, viscosity, compressibility, turbulence, or boundary layer;

(G) define statics concepts such as free body diagrams, force, torque, moment, or equilibrium;

(H) define controls concepts such as open loop, closed loop, or systems modeling; and

(I) identify and explain the use of engineering computational tools such as computer-aided design (CAD), finite element analysis (FEA), or computational fluid dynamics (CFD).

§127.412. Mechanical Design II (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Mechanical Design I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Mechanical Design II demonstrate knowledge and skills associated with the design development and validation of a prototype solution to meet a given set of requirements. Students identify project stakeholders; manage projects; evolve requirements; model system solutions; develop, test, and refine prototypes; and validate project solutions. Emphasis is placed on budget management, professional documentation, conducting project status updates, critiquing design reviews, and team collaboration.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(4) Collaboration. The student develops teamwork skills. The student is expected to:

(A) explain and apply sensemaking skills such as recognizing team members who require additional clarity and addressing team members to provide clarity;

(B) apply methods such as Gantt charts, work breakdown structure, Agile, and critical path method to structure a project;

(C) apply principles of critique within the team such as describing, analyzing, interpreting, and evaluating;

(D) develop and present action plans to positively support the team's work relationships;

(E) explain and model how to provide an effective critique of team members on topics such as team performance, test performance, project development, or presentation;

(F) explain and model how to provide an effective critique of other teams on topics such as presentation, problem definition, schedule, and solution justification;

(G) analyze and evaluate critique received from team members and other teams; and

(H) develop a design review presentation to provide status and solicit feedback on the design problem and solution.

(5) Documentation. The student documents information gathered and interpretations developed throughout the applied engineering process. The student is expected to:

(A) generate documents such as executive summaries, reverse engineering forms, test reports, failure documents, system black box models, engineering notebooks, and drawing packages by applying professional standards and templates;

(B) select the appropriate document format for the information being communicated based on the audience;

(C) explain and justify the structure and sequence of how the information is presented in the engineering documents;

(D) create assembly and user manuals for peer review; and

(E) generate a final design report that focuses on the project scope and solution with appendices to capture all relevant design information such as the design process used, requirements compliance matrix, concept reports, and test reports.

(6) Project management. The student reviews and applies basic project management strategies following a proposal-justification-approval process for each significant model considered. The student is expected to:

(A) generate a project management plan that includes time and deliverable estimates;

(B) review and update periodically the project management plan based on appropriate industry standard practices such as stage-gate and Agile Project Management; team structure and formation; and project modeling such as flow charts, Gantt charts, Program Evaluation Review Technique (PERT), critical path method, and work breakdown structures;

(C) create model or test proposals for review; and

(D) compare project management approaches such as stage-gate and Agile.

(7) Stakeholder. The student understands how to engage stakeholders, including end user, consumer, fabricator, maintenance, the design team, and other engineers. The student is expected to:

(A) describe how an engineer's professional responsibility applies to stakeholders;

(B) develop a journey map or equivalent tool to model how the stakeholder interacts with the product; and

(C) explain the importance of maintaining engagement with the stakeholder throughout the project.

(8) Design requirements. The student understands the importance of the role of requirements in the mechanical engineering design process. The student is expected to:

(A) identify and solicit stakeholder requirements;

(B) generate, refine, and document product and project requirements throughout the project;

(C) document requirements in correct format with appropriate standards such as National Aeronautics and Space Administration (NASA), military, and International Council on Systems Engineering (INCOSE);

(D) verify that each requirement can be associated to at least one stakeholder;

(E) verify that each stakeholder can be associated to at least one requirement;

(F) discuss the importance of the relation between requirements and respective stakeholders;

(G) analyze how key mechanical design concepts such as heat transfer, mechanics of materials, statics, or fluids impact the design process, design requirements, and design decisions; and

(H) explain how requirements drive the project.

(9) System modeling. The student generates multiple abstract models of mechanical systems using representations such as schematic diagramming and function structure modeling. The student is expected to:

(A) create models of various mechanical system concepts;

(B) compare different models against the appropriate requirements;

(C) extract new system requirements from the models;

(D) create models to communicate engineering design solutions to stakeholders for a project;

(E) discuss conservation principles of energy, matter, and motion; and

(F) apply conservation principles throughout the system model.

(10) Design space modeling. The student models conceptual design spaces using morphological matrices. The student is expected to:

(A) select the key requirements for the problem;

(B) generate multiple means to address each key requirement to populate a morphological matrix;

(C) generate multiple integrated solutions by selecting means from each requirement for further modeling and refinement; and

(D) calculate the total number of possible solutions captured in the generated morphological matrix.

(11) Concept generation. The student generates multiple systematic concepts using appropriate ideation tools. The student is expected to:

(A) explain the rules of ideation tools such as brainstorming, 6-3-5, Gallery Method, C-Sketch, and concept mapping;

(B) apply ideation tools to generate multiple concepts for a problem; and

(C) compare the ideation tools based on the rules, number of people, representation, and purpose.

(12) Concept pruning. The student prunes sets of concepts using design tools such as decision matrices, pair-wise comparison, and pro-con lists. The student is expected to:

(A) use and explain absolute or relative decision matrices to prune a set of concepts;

(B) use and explain pair-wise comparisons to prune a set of concepts;

(C) use and explain pro-con lists to prune a set of concepts;

(D) explain why it is important to use multiple pruning tools in design; and

(E) explain why the pruning tools are not for selecting concepts.

(13) Prototyping and testing. The student fabricates multiple physical prototypes ranging from parts to subsystems to final integrated prototypes to gather information needed to support mechanical engineering design decision making. The student is expected to:

(A) develop prototyping proposals that include cost, time, and effort estimates; desired information; and testing plans;

(B) use appropriate tools and materials to fabricate prototypes;

(C) evaluate and execute testing plans for each prototype to gather information or check requirement satisfaction;

(D) extract and document new requirements from prototyping and testing; and

(E) justify the purpose for each physical or virtual model constructed against the cost of making the model.

(14) Embodiment and refinement. The student refines design solutions by selecting and sizing components appropriately. Students justify material choices based on the requirements defined. The student is expected to:

(A) construct geometric models and drawings to represent designed system;

(B) justify and use appropriate analytical and simulation tools to correlate the changes in parameters of the models with changes in the performance of the modeled system;

(C) justify design decisions using requirements such as functionality, cost, performance, or time;

(D) use appropriate tools and materials to fabricate a final prototype;

(E) develop final product documents such as bill of materials, assembly models, user manual, and assembly instructions; and

(F) explain the evolution of requirements between earlier and final prototypes.

(15) Solution validation. The student tests and verifies requirements throughout the project. The student understands the importance of discovering new requirements through testing and simulation. The student is expected to:

(A) analyze information gained from testing and simulation to document new or refined requirements;

(B) document simulations or tests using an appropriate report template;

(C) design and execute simulations or tests to validate functional requirements are met;

(D) explain why engineering design processes are iterative; and

(E) discuss how continuous improvement and design iteration are related.

(16) Budget. The student plans, monitors, and updates project budgets throughout the design project. The student is expected to:

(A) create budgets for initial project costs such as raw materials, purchased parts, salvaged parts, hardware, taxes, shipping, and handling categories;

(B) create a Bill of Materials cost report for the final build;

(C) compare and explain any differences between the final product build cost and the project budget;

(D) monitor and update the project budget throughout the duration of the project;

(E) prepare budget status reports that include explanations of spenddown rates and changes to the budget; and

(F) explain the importance of budget tracking in design projects.

§127.413. Aerospace Design I (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. Recommended corequisite: Geometry. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Aerospace Design I demonstrate knowledge and skills associated with the design evolution and emerging trends of aircraft and aerospace systems. Fundamental concepts such as forces of flight, structures, aerodynamics, propulsion, stability and control, and orbital mechanics are introduced as related to design decisions for atmospheric and space flight. These concepts are related to mission requirements and solution approaches.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student discusses ethics pertaining to engineering. The student is expected to identify and discuss the importance of professionalism, standards of conduct, and ethics as defined by the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying.

(2) The student understands that there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define ideation and conceptualization and discuss the role these processes play in innovation and problem solving;

(D) explain the processes of selecting an idea or concept for detailed prototype design, development, and testing;

(E) describe the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the process of relevant experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) describe the purpose of effective communication of the engineering solution as obtained through the engineering design process to various audiences.

(3) The student explores and develops skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(4) Collaboration. The student engages in multiple team projects and activities. The student is expected to:

(A) discuss principles of critique such as describing, analyzing, interpreting, and evaluating;

(B) identify and demonstrate teamwork skills such as sensemaking where a team member recognizes another team member who requires additional clarity and then addresses the team member by providing clarity;

(C) identify methods for structuring projects such as Gantt charts, work breakdown structure, Agile, and critical path method; and

(D) discuss the importance of contributing to positive and productive group dynamics to enhance teamwork.

(5) Documentation. The student documents information and interpretation developed throughout engineering processes. The student is expected to:

(A) use professional standards and templates to generate documents such as executive summaries, test reports, failure documents, system black box models, engineering notebooks, and drawing packages;

(B) select the document format to communicate essential information for identified stakeholders; and

(C) explain and justify the structure and sequence of how the information is presented in the engineering documents.

(6) History of flight. The student understands the history and evolution of human flight, including flight within and outside the Earth's atmosphere. The student is expected to:

(A) identify and discuss successes and failures in human efforts to fly prior to powered flight;

(B) research and discuss innovations in aircraft prior to the jet age and explain how world events impacted these innovations;

(C) research and discuss innovations in aircraft after the beginning of the jet age and explain how world events impacted these innovations;

(D) research and discuss innovations in rockets prior to human spaceflight and explain how world events impacted these innovations;

(E) research and discuss innovations in rockets after the first human spaceflight and explain how world events impacted these innovations; and

(F) discuss the history of regulation of aircraft and the role of the Federal Aviation Administration (FAA).

(7) Introduction to aircraft. The student explains the FAA categories for aircraft and categorizes the different types of aircraft such as airplanes, rotorcraft, lighter-than-air or aerostats, glider, powered-lift, powered parachutes, weight-shift aircraft, ground-effect vehicles (GEV), air-cushion vehicles (ACV), and rockets. The student is expected to:

(A) identify and describe classes of aircraft such as single-engine land (SEL), gyroplane, powered-lift, and glider using the FAA categories;

(B) categorize aircraft by attributes such as piston engine, turboprop, powered or unpowered, and drones or piloted;

(C) compare aircraft categories and use cases for each category; and

(D) research and discuss emerging trends in aircraft such as airships, rotary powered aircraft, and alternative energy powered aircraft.

(8) Atmospheric flight. The student identifies and relates the three axes of an aircraft, the four forces of flight, and the components used for stability and control of the aircraft. The student is expected to:

(A) explain the relationships between atmospheric temperature, pressure, density, and altitude;

(B) identify and describe the motion about the three axes of an aircraft, including yaw, pitch, and roll;

(C) identify and describe ways to control motion about the three axes;

(D) identify and explain the four forces acting on aerospace vehicles in flight, including lift, drag, thrust, and weight;

(E) explain the relationship between weight, mass, gravity, and acceleration and identify their corresponding units such as pounds-force, pound-mass, kilogram, and Newton;

(F) discuss the difference between g-force and weight;

(G) draw the forces of flight for a straight and level flight and a level banked turn;

(H) identify different ways to control the forces that change the pitch, roll, and yaw of an aircraft;

(I) identify and explain the major fixed and movable components of various aircraft to enable stability and control within the atmosphere; and

(J) define and discuss aerodynamics as a subset of aerospace.

(9) Lift and drag. The student explains how lift and drag are generated by an aircraft and how they change during flight. The student is expected to:

(A) explain how an airfoil generates lift;

(B) explain how the angle of attack (AoA) influences lift;

(C) explain how to interpret a "Lift Coefficient (CL) versus AoA" chart;

(D) define and discuss stall for an airfoil;

(E) explain the types of drag, including profile/form, skin friction, interference, trim, and induced;

(F) explain how the AoA influences drag;

(G) explain how to interpret a "Drag Coefficient (CD) versus AoA" chart;

(H) explain how changes in drag during flight impact performance such as range, altitude, and power requirements;

(I) define and discuss Lift-to-Drag (L/D) ratio;

(J) explain how to interpret an L/D chart;

(K) identify the maximum L/D ratio from a chart to determine the optimal glide speed for maximum range;

(L) research and discuss other systems that use airfoils such as windmills, fans, and propelling aircraft; and

(M) explain how a plane can fly without engine power and in some cases can gain altitude to stay aloft for extended time and distance.

(10) Weight and balance. The student recognizes that components have mass, weight, and location resulting in moments that are balanced by control surfaces. The student is expected to:

(A) identify and calculate moments created by the forces of flight;

(B) define and discuss center of gravity (CG);

(C) define and discuss center of pressure (CP);

(D) explain how the locations of the CP and CG influence the stability of an aircraft; and

(E) create a model of an aircraft with variable configurations for CG and CP to determine stability of an aircraft.

(11) Computerized design tools. The student understands that computerized technology is available for design and analysis. The student is expected to:

(A) identify engineering computational tools such as computer-aided design (CAD), finite element analysis (FEA), or computational fluid dynamics (CFD); and

(B) explain the applications of engineering computational tools used in aerospace design.

(12) Mission requirements. The student understands how mission requirements influence the type and form of aircraft. The student is expected to:

(A) analyze a mission to generate a list of atmospheric mission requirements such as payload, range, cruise, take-off length, landing length, climb gradient, altitude, and land or sea;

(B) analyze a mission to generate a list of space mission requirements such as payload, altitude, vibration sensitivity, launch conditions, environmental conditions, and recovery;

(C) explain how the mission requirements are interrelated;

(D) discuss how the mission requirements relate to the aircraft and spacecraft categories;

(E) discuss how mission requirements relate to the overall aircraft design; and

(F) interpret a mission profile and explain how it impacts mission requirements.

(13) Propulsion. The student explains and evaluates different types of propulsion systems such as piston engine, turboprop, jet, and rocket. The student is expected to:

(A) identify and explain how a piston powered aircraft delivers thrust with respect to altitude limits and speed limitations;

(B) identify and explain how a turboprop powered aircraft delivers thrust with respect to design requirements such as cost, operation cost, reliability, power, altitude limits, and speed limitations;

(C) identify and explain how a jet powered aircraft delivers thrust with respect to design requirements such as cost, operation cost, reliability, power, altitude limits, and speed limitations;

(D) explore and explain how a rocket engine is different from a jet engine;

(E) research and discuss the applications for solid-fuel rockets; and

(F) research and discuss the applications for liquid-fuel rockets.

(14) Material selection. The student explains why a particular material is used in an aircraft application, taking into account cost, density, strength, and mission requirements. The student is expected to:

(A) research and discuss material classes used in aerospace design such as woods, composites, metals, and plastics;

(B) explain why specific materials might have been chosen for components on different aircraft;

(C) discuss methods for manufacturing aircraft components such as landing gears, wings, fuselage, or canopies;

(D) explain the impact of material and manufacturing costs on design decisions; and

(E) explain how material requirements relate to mission requirements.

(15) Aerospace structures. The student explains and compares and contrasts types of structures such as truss, semi-monocoque, monocoque. The student is expected to:

(A) identify and discuss truss, semi-monocoque, and monocoque structures;

(B) explain why different structure types are used in various aircraft categories;

(C) discuss how mission requirements impact the selection of the structural types for an aircraft;

(D) identify structural components in the fuselage such as stringers, bulkheads, and skin;

(E) identify structural components in the wings and empennage such as ribs, spars, stringers, and skin; and

(F) compare structures used in atmospheric flight and space flight.

(16) Space flight and orbital mechanics. The student knows properties of orbital mechanics as they relate to space flight and the impact of the space environment on design. The student is expected to:

(A) identify and describe orbits based on the six Keplerian Elements;

(B) explain how changes in Keplerian Elements change the orbit;

(C) explain how mission requirements determine specific orbit types;

(D) describe the unique environmental conditions of operating in space for human or autonomous missions;

(E) research and discuss methods to reach and recover a spacecraft from space; and

(F) research and discuss emerging trends in space flight.

(17) Alternate applications for aerospace design. The student examines alternate applications for aerospace design in various industries, including the automotive, naval, and other commercial industries. The student is expected to:

(A) research and discuss how aerospace engineers contribute to automotive and naval applications to improve performance;

(B) research and identify commercial applications for aerospace design such as heating and cooling systems, building design, and wind turbines; and

(C) identify and discuss items at home that are impacted by aerodynamics such as fans, convection ovens, and heating and cooling systems.

(18) Aircraft systems. The student explores and discusses other aircraft systems such as navigation, communication, entertainment, flight control, actuation, energy storage and management, and propulsion. The student is expected to:

(A) explain basic functionality for aircraft systems such as navigation, communication, entertainment, flight control, and propulsion; and

(B) research and discuss different implementations for aircraft systems such as navigation, communication, entertainment, flight control, and propulsion.

§127.414. Aerospace Design II (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Geometry and Aerospace Design I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Aerospace Design II demonstrate knowledge and skills associated with the design and prototyping of aerospace systems. Through aerospace projects, students apply fundamental concepts such as managing an engineering project to meet mission requirements, prototyping, testing, and validating requirements. Students explore choices made for propulsion, material, and structural design as well as various ways aircraft can navigate. Emphasis is placed on team collaboration and professional documentation.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(4) Collaboration. The student engages in multiple team projects and activities. The student is expected to:

(A) explain and apply sensemaking skills such as recognizing team members who require additional clarity and addressing team members to provide clarity;

(B) apply methods such as Gantt charts, work breakdown structure, Agile, and critical path method to structure a project;

(C) apply principles of critique within the team such as describing, analyzing, interpreting, and evaluating;

(D) develop and present action plans to positively support the team's work relationships;

(E) explain and model how to provide an effective critique of team members on topics such as team performance, test performance, project development, or presentation;

(F) explain and model how to provide an effective critique of other teams on topics such as presentation, problem definition, schedule, and solution justification;

(G) analyze and evaluate critique received from team members and other teams; and

(H) develop a design review presentation to provide status and solicit feedback on the design problem and solution.

(5) Documentation. The student documents information and interpretation developed throughout engineering processes. The student is expected to:

(A) generate documents such as executive summaries, reverse engineering forms, test reports, failure documents, system black box models, engineering notebooks, and drawing packages by applying professional standards and templates;

(B) select the appropriate document format for the information being communicated based on the audience;

(C) explain and justify the structure and sequence of how the information is presented in the engineering documents;

(D) create assembly and user manuals for peer review; and

(E) generate a final design report that focuses on the project scope and solution with appendices to capture all relevant design information such as the design process used, requirements compliance matrix, concept reports, and test reports.

(6) Designing to mission requirements. The student generates conceptual aircraft solutions to meet a set of given requirements. The student is expected to:

(A) analyze given mission requirements such as altitude, speed, and payload to derive sub-requirements;

(B) generate and document additional sub-requirements for the mission considering various factors such as maintainability, producibility, operational cost, and safety;

(C) generate and document conceptual aircraft solutions to address mission and sub-requirements;

(D) classify the generated conceptual aircraft solutions into appropriate categories such as single-engine land (SEL), gyroplane, powered-lift, and glider using the Federal Aviation Agency (FAA) classification system;

(E) select, justify, and document a conceptual solution that addresses the mission and sub-requirements; and

(F) create a model such as a graph or matrix that displays the relationships between the documented requirements.

(7) Managing aerospace engineering projects. The student applies project management techniques to aerospace projects. The student is expected to:

(A) generate a project plan that includes time, deliverable, and cost estimates;

(B) review and update periodically a project plan according to a stage gate process;

(C) document and execute test plans to evaluate prototypes against requirements;

(D) justify and present design choices through periodic design reviews; and

(E) generate a final design report with an executive summary, a body with problem and solution descriptions, and appendices with additional relevant information such as the design process used, requirements compliance matrix, concept reports, and test reports.

(8) Prototyping aerospace vehicles. The student creates a prototype to address a set of mission requirements. The student is expected to:

(A) generate a list of design parameters based on the mission and sub-requirements;

(B) generate and document design concepts to address design parameters;

(C) use appropriate tools such as decision matrices, pro-con lists, and pair-wise comparison to evaluate, downselect, and justify design concepts to prototype;

(D) create and document prototypes to test, validate, and modify design concepts;

(E) use appropriate tools such as decision matrices, pro-con lists, and pair-wise comparison to evaluate, downselect, and justify a prototype to develop as the solution;

(F) evaluate a prototype to identify areas of improvement for iteration;

(G) test, evaluate, and document performance of the revised prototype in meeting project requirements; and

(H) compose and present a project debrief, including lessons learned.

(9) Atmospheric flight. The student relates the three axes of an aircraft, the four forces of flight, and the components used for stability and control. The student is expected to:

(A) research and discuss ways to control motion about the three axes;

(B) calculate and explain changes in motion due to the four forces acting on aircraft during flight;

(C) explain why loads acting on aircraft change during different flight scenarios;

(D) draw and calculate the forces of flight for a straight and level flight and a level banked turn; and

(E) describe which aircraft components control and provide stability with respect to the six degrees of freedom.

(10) Lift and drag. The student explains how lift and drag are generated by an aircraft and how they change during flight. The student is expected to:

(A) explain the lift equation and illustrate the relationships between its variables;

(B) explain the drag equation and illustrate the relationships between its variables;

(C) calculate the changes to lift and drag based on changes to atmospheric conditions such as temperature, density, and pressure;

(D) describe how aircraft control surfaces, including leading edge flaps, trailing edge flaps, ailerons, and spoilers, influence lift;

(E) describe how aircraft control surfaces, including leading edge flaps, trailing edge flaps, ailerons, and spoilers, influence drag;

(F) define and discuss how the stall angle and stall speed can be changed; and

(G) research and present contemporary developments reducing drag such as winglets, boundary layer control, and surface effects.

(11) Weight and balance. The student recognizes that components have mass, weight, and location resulting in moments that are balanced by control surfaces. The student is expected to:

(A) calculate an aircraft's estimated center of gravity throughout a mission profile considering factors such as fuel consumption, payload, and passengers;

(B) estimate the location of an aircraft's center of pressure;

(C) calculate the static margin throughout a flight profile to verify positive stability margin;

(D) generate and document solutions to improve positive static stability in the event of a negative stability margin; and

(E) revise and document static margin calculations reflecting proposed solutions.

(12) Propulsion. The student evaluates various propulsion solutions to downselect the solutions to meet mission requirements. The student is expected to:

(A) evaluate and select a propulsion solution that meets requirements such as piston, jet, turboprop, and rocket;

(B) evaluate and select the number of engines to meet mission and sub-requirements; and

(C) calculate propulsion weight of the selected solution to meet mission and sub-requirements.

(13) Material selection. The student evaluates various materials to meet mission and sub-requirements. The student is expected to:

(A) analyze component material requirements to select materials that meets mission and sub-requirements; and

(B) document the justification for the materials selected to meet component requirements.

(14) Aerospace structures. The student evaluates and selects structure types to meet mission and sub-requirements. The student is expected to:

(A) analyze structural requirements to select structure types that meets mission and sub-requirements; and

(B) document the justification for the structure types selected to meet structural requirements.

(15) Navigation. The student defines and explains types of navigation used for flight. The student is expected to:

(A) explain dead reckoning navigation using an aeronautical chart, compass, clock, and airspeed indicator;

(B) explain navigation using radio radials such as Automatic Direction Finder (ADF) and VHF Omnidirectional Range (VOR);

(C) explain navigation using an Inertial Navigation System (INS); and

(D) explain navigation using Global Positioning Systems (GPS).

§127.415. Civil Engineering I (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. Prerequisite: Algebra I and Introduction to Computer-Aided Design and Drafting or Principles of Applied Engineering. Recommended prerequisite: Geometry. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students in Civil Engineering I are introduced to the basic principles and practices essential to the field of civil engineering. Throughout this course students investigate different career paths in civil engineering, explore the various specializations within the field, and understand the phases and life cycle of civil engineering projects. They also delve into the functional mathematics crucial to the profession. Additionally, the course emphasizes the importance of effective project document structure and project management, ethical considerations, and the impact of civil engineering on the natural and built environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands that there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define ideation and conceptualization and discuss the role these processes play in innovation and problem solving;

(D) explain the processes of selecting an idea or concept for detailed prototype design, development, and testing;

(E) describe the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the process of relevant experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) describe the purpose of effective communication of the engineering solution as obtained through the engineering design process to various audiences.

(2) Students explore and develop skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(3) The student understands the foundations of occupational safety and health. The student is expected to:

(A) explain and discuss the responsibilities of workers and employers to promote safety and health in the workplace and the rights of workers to a secure workplace;

(B) explain and discuss the importance of Occupational Safety and Health Administration (OSHA) standards and OSHA requirements for organizations, how OSHA inspections are conducted, and the role of national and state regulatory entities;

(C) explain the role industrial hygiene plays in occupational safety and explain various types of industrial hygiene hazards, including physical, chemical, biological, and ergonomic;

(D) identify and explain the appropriate use of types of personal protective equipment used in industry;

(E) discuss the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(F) describe types of electrical hazards in the workplace and the risks associated with these hazards and describe control methods to prevent electrical hazards in the workplace;

(G) analyze the hazards of handling, storing, using, and transporting hazardous materials and identify and discuss ways to reduce exposure to hazardous materials in the workplace;

(H) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and discuss how these resources are used to make decisions in the workplace;

(I) describe the elements of a safety and health program, including management leadership, worker participation, and education and training;

(J) explain the purpose and importance of written emergency action plans and fire protection plans and describe key components of each such as evacuation plans and emergency exit routes, list of fire hazards, and identification of emergency personnel;

(K) explain the components of a hazard communication program; and

(L) explain and give examples of safety and health training requirements specified by standard setting organizations.

(4) The student investigates different career paths in civil engineering. The student is expected to:

(A) explain the licensing requirements for an engineer in training and a professional engineer;

(B) identify various career options related to civil engineering such as surveyors, architects, construction contractors, urban and regional planners, inspectors, and regulators;

(C) identify and explain the requirements to obtain professional credentials such as certified flood plain manager (CFM), project management professional (PMP), professional engineer (PE), Autodesk certifications, SolidWorks certifications, certified surveying technician (CST), registered professional land surveyor (RPLS), certified quality engineer (CQE), and certified quality inspector (CQI) associated with civil engineering; and

(D) describe sub-disciplines within civil engineering, including water resources, environmental, geotechnical, structural, transportation, material sciences, coastal, land development, urban development, and infrastructure.

(5) The student examines the functional mathematics used in civil engineering. The student is expected to:

(A) calculate the mean, median, and mode of a given data set;

(B) calculate the standard deviation of a given data set;

(C) identify parts of a normal distribution curve;

(D) define the Empirical Rule and analyze the distribution of a data set using the Empirical Rule;

(E) define systematic, gross, and random error;

(F) define accuracy and precision in a data set;

(G) analyze the accuracy and precision of a data set;

(H) identify the types and properties of various polygons;

(I) solve for the parts of a triangle using the Pythagorean theorem, the law of sines, and the law of cosines;

(J) identify the properties of circles;

(K) solve for the measurements of a circle, including diameter, radius, circumference, area, chord, arclength, delta, and tangent;

(L) solve linear functions on a Cartesian Coordinate System using standard form, slope-intercept form, point-slope form, and the distance between two points; and

(M) calculate the volumes of three-dimensional shapes such as cylinders, spheres, and trapezoidal and triangular prisms.

(6) The student understands methods of measurement and associated errors. The student is expected to:

(A) define units of linear measurement, including U.S. survey feet, international feet, chains, rods, miles, fathoms, furlongs, varas, and other metric units commonly used in the surveying and civil engineering industry;

(B) define the different units of angular measurement, including vertical angles, horizontal angles, bearings, azimuths, degrees-minutes-seconds, decimal degrees, seconds of arc, and gradians;

(C) define the different units of volumetric measurement, including cubic feet, cubic yards, tons, and acre-feet;

(D) calculate and define area measurements such as acre, hectare, square feet, square mile, league, or sitio;

(E) convert linear, angular, and area measurements between different units;

(F) determine a change in elevation between two or more points by performing a differential level loop;

(G) measure the distance between two points on a plane using methods such as taping, electronic distance meter, total station, pacing, odometer, tacheometry, and stadia;

(H) compare the errors from two or more methods of calculating distance between two points such as comparing pacing and taping; and

(I) identify and analyze various types of errors associated with survey data.

(7) The student researches civil engineering throughout history. The student is expected to:

(A) describe the significance and development of historic civil engineering projects such as the Panama Canal, Roman aqueducts, and Hadrian's wall;

(B) describe the significance and development of a major Texas civil engineering project; and

(C) describe the significance and development of a major U.S. civil engineering project.

(8) The student understands a civil engineering project life cycle. The student is expected to:

(A) explain the civil engineering project conception, scope, proposal, contract, design planning and development, construction documents, bid and specifications, construction, and closeout phase; and

(B) identify and sequence the phases of a project life cycle.

(9) The student understands and develops a civil engineering project scope of work and proposal. The student is expected to:

(A) identify and describe the importance of potential components in a feasibility report, including soil analysis, existing land entitlements, existing topography, federal emergency management agency (FEMA) floodplain location and elevation, existing utility and locations, environmental studies, and adjacent rights-of-way;

(B) identify and quantify costs and benefits associated with a proposed civil engineering project, including initial investments, operational expenses, and anticipated returns;

(C) conduct a cost-benefit analysis for a small civil engineering project;

(D) identify common risks associated with civil engineering projects, including technical, financial, environmental, and regulatory risks;

(E) describe methodologies for conducting risk analysis such as probability assessment, impact analysis, and risk prioritization;

(F) develop a feasibility report for a small civil engineering project;

(G) explain the purpose of a request for qualifications (RFQ);

(H) evaluate RFQs based on a project's scope;

(I) identify relevant codes and regulations impacting civil engineering projects;

(J) define the fundamental components of a scope of work document, including project description, stakeholders, objectives, deliverables, scope exclusions, milestones, schedule, and signature block; and

(K) develop a scope of work document for a small civil engineering project.

(10) The student understands and develops the components of civil engineering designs. The student is expected to:

(A) identify various conceptual schematic design drawings, sketches, and diagrams that explore design solutions and communicate design concepts;

(B) generate a conceptual schematic design drawing, sketch, or diagram that effectively communicates a design concept;

(C) explain the purpose and application of common civil engineering calculations such as superelevation, flow line, beam analysis, cost amortization, materials testing, plasticity index, and differential leveling;

(D) evaluate engineering plans and specifications using quality control and quality assurance (QCQA) processes; and

(E) prepare a design quantity take-off and estimate of probable construction cost.

(11) The student researches the use and application of technology in civil engineering. The student is expected to:

(A) identify the tools and technology used in civil engineering throughout history such as abacus, compass, scale, measuring tape, slide rule, calculator, computer-aided drafting and design, level, auto-level, grade rod, plumb bob, transit, theodolite, total station, GPS, lidar, and drones;

(B) explain the evolution of technology used in civil engineering; and

(C) explain the uses of design analysis and computer-aided drafting software.

(12) The student understands and researches the components of project closeout processes. The student is expected to:

(A) identify the main stakeholders involved in final inspections such as owner, utility provider(s), designer(s), contractors, municipalities, and regulatory agencies;

(B) develop a punch list that is organized by trade, area, or priority and identifies deficiencies in a substantially completed project; and

(C) evaluate the completed project to identify project successes and deficiencies.

(13) The student understands and navigates civil engineering construction documents. The student is expected to:

(A) identify the sections of a construction document set, including plat, existing conditions, site plan, fire protection plan, dimensional control plan, grading plan, drainage plan, utility plan, paving plan, erosion control plan, and project detail sheets;

(B) research and describe the purpose of a fire protection plan;

(C) describe the components of a paving plan, including pavement sections, material types, and design details;

(D) identify and locate construction specification documents relevant to a given project;

(E) explain and locate the fundamental components of a construction document's legend, including symbols, line types, and typical abbreviations;

(F) explain the process of drafting a construction document to scale;

(G) determine and demonstrate which scale best fits a standard size drawing sheet;

(H) explain the relationship between a construction document's specifications, plans, legend, and scale; and

(I) identify and explain the differences between design drawings and record drawings.

(14) The student applies best practices for effective project document structure and management. The student is expected to:

(A) explain the significance of systematic organizational structure for project documents;

(B) develop a systematic organizational structure for project documents that considers factors such as project phase, discipline, and document type;

(C) develop a consistent naming convention for project documents; and

(D) implement and maintain a uniform naming convention for project documents.

(15) The student describes and exhibits characteristics that lead to a successful civil engineering team. The student is expected to:

(A) research and describe time management techniques such as using Gantt charts, schedules, critical paths, and man-power projections for project management;

(B) demonstrate effective communication skills in written and oral formats to facilitate collaboration in a project team; and

(C) explain how project team dynamics impact project outcomes and member morale.

(16) The student researches and describes ethics pertaining to civil engineering. The student is expected to:

(A) research and identify the fundamental engineering ethics established by the Texas Board of Professional Engineers and Land Surveyors; and

(B) analyze root causes and lessons learned from historical examples or case studies involving ethical misconduct in civil engineering projects.

(17) The student explores the impact of engineering in the natural world and built environment. The student is expected to:

(A) describe the potential impacts, costs, and benefits of sustainable practices on local and global communities, environments, and economies;

(B) apply cost-benefit analysis to sustainability standards used throughout the project life cycle to evaluate their economic, environmental, and social trade-offs;

(C) describe governmental agencies that regulate environmental impact at the federal, state, and local level;

(D) describe the potential impacts of construction on the natural world, including flora, fauna, groundwater, surface water, soil, Earth's atmosphere, air quality, and waterways; and

(E) describe methods used by engineers to mitigate and remediate the effects of construction on the natural world.

(18) The student understands the methods environmental engineers use to supply water, dispose of waste, and control pollution. The student is expected to:

(A) describe methods of population projection for sizing water and wastewater facilities;

(B) describe water quality standards using prescribed units of measure;

(C) research and explain regulations for water quantity design requirements by jurisdiction;

(D) research and explain regulations for wastewater quantity design requirements by jurisdiction;

(E) research and describe methods of water and wastewater treatment;

(F) research and describe methods of solid waste management;

(G) research and describe methods of controlling hazardous waste; and

(H) research and describe methods of measuring and managing air quality.

§127.416. Civil Engineering II (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisites: Geometry and Civil Engineering I. Recommended prerequisite: Introduction to Computer-Aided Design and Drafting. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students in Civil Engineering II apply the principles and practices essential to various subdisciplines within civil engineering. Throughout this course, students develop knowledge and skills essential to the design development and construction of a civil engineering project. The students explore the impacts and constraints on the design of a project. They also delve into the functional mathematics crucial to the profession. Additionally, the course emphasizes the importance of effective project document structure and project management, ethical considerations, and the impact of civil engineering on the natural and built environment.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(2) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(3) The student recognizes project stakeholders and industry organizations in civil engineering. The student is expected to:

(A) describe the roles and objectives of project stakeholders, including engineer, owner, architect, contractor, subcontractors, project manager, end users, regulatory agencies, and the public; and

(B) describe the mission and membership benefits of industry organizations such as the American Society of Civil Engineers, the National Society of Professional Engineers, and the Society of Women Engineers.

(4) The student explores various disciplines within civil engineering. The student is expected to:

(A) describe the essential technical knowledge and functions in a variety of civil engineering subdisciplines, including environmental, geotechnical, transportation, structural, water resources, and construction;

(B) explain how different types of projects within civil engineering subdisciplines, including public works, transportation, urban development, water resources, and utility projects, impact the built environment; and

(C) identify and describe types of civil engineering projects.

(5) The student explores how codes, regulations, and plats impact a civil engineering project. The student is expected to:

(A) research and describe regulations established by the American Disabilities Act relevant to site design;

(B) identify local codes and regulations for a civil engineering project;

(C) describe the potential impacts of local codes and regulations on civil engineering projects; and

(D) describe the purpose of a plat and easements for a civil engineering project.

(6) The student develops a proposal for a civil engineering project such as a park, a parking lot, or a storm drain. The student is expected to:

(A) analyze or develop a feasibility report for a civil engineering project;

(B) develop and analyze the scope of work document for a civil engineering project;

(C) calculate monetary value for engineering efforts on a given project;

(D) revise and archive the draft project proposal for scope of work changes;

(E) develop a client deliverable package that contains a fee proposal, project schedule, organizational chart, exclusions, and an engineering contract;

(F) communicate effectively a final proposal for a civil engineering project; and

(G) identify and evaluate lessons learned from the project proposal process.

(7) The student develops a civil engineering project schedule. The student is expected to:

(A) identify and prioritize project tasks to determine the critical path of a project;

(B) create a project critical path diagram;

(C) evaluate project tasks and the critical path to develop a project schedule;

(D) create a Gantt chart for all the project activities in a project; and

(E) assess a project schedule for opportunities to improve project efficiencies.

(8) The student develops a civil engineering design for a project site. The student is expected to:

(A) create a concept site plan using existing schematics, survey data, and regulatory design manuals;

(B) identify existing and proposed utility providers, including electric, water, sewer, gas, and telecommunications providers, at a project site;

(C) research and identify existing plats and easements for a project site; and

(D) revise and finalize a project site plan to reflect analyzed site data, including utilities, geotechnical, right-of-way, water resources, environmental, survey, and transportation data.

(9) The student explores concepts and calculations for storm water events used by water resources engineers. The student is expected to:

(A) describe storm event probability based on historical models;

(B) describe methods used, including Rational method, Natural Resources Conservation Service (NRCS), Soil Conservation Service (SCS), and unit hydrograph, to calculate flow rate;

(C) analyze existing topography at the project site to determine drainage patterns;

(D) delineate existing and proposed drainage areas impacting a project site to determine the change in stormwater runoff generated by a project design;

(E) research and describe methods of stormwater mitigation and water quality treatment;

(F) calculate the existing flow rates for a 5-year and a 100-year storm event for a project site using the Rational method;

(G) analyze and calculate the proposed flow rates for a 5-year and a 100-year storm event for a project design;

(H) determine the required stormwater remediation techniques for a 100-year storm event by comparing existing and proposed runoff quantities;

(I) describe methods of stormwater conveyance, including channel, culvert, and pipe;

(J) calculate the hydraulics of a stormwater conveyance using the continuity equation, energy equation, and Bernoulli's equation;

(K) design a conveyance system such as a pipe, culvert, or open channel to convey stormwater runoff for a 100-year storm event using the calculated data;

(L) create a plan and profile sheet of a drainage system, including surface elevations, slopes, conveyance system dimensions, material, and pipe invert elevations; and

(M) describe potential impacts of a drainage analysis for a project.

(10) The student explores concepts and calculations used by geotechnical engineers. The student is expected to:

(A) identify and explain the components of a geotechnical report, including boring samples and logs, soil types and classifications, pavement recommendations, foundations recommendations, and soil preparations;

(B) identify and determine the soil classifications at a project site using the United States Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) Web Soil Survey (WSS);

(C) calculate the plasticity index of soil from a project site;

(D) research and describe methods of soil preparation;

(E) research and explain how geotechnical results impact pavement recommendations used in civil engineering projects;

(F) research and select the most effective pavement section for a project; and

(G) describe the impact of a geotechnical analysis for a project.

(11) The student explores concepts and calculations used by structural engineers. The student is expected to:

(A) identify and analyze the various types of building foundations, including raft, monolithic slab, slab on grade, pier and beam, spread footing, mat footing, drilled piers, pylons, waffle slab, and post-tension slab;

(B) describe the forces common to structural engineering calculations, including gravity, tension, compression, flexure, and torsion;

(C) describe the loads common to structural engineering calculations, including dead load, live load, environmental loads, and other loads such as lateral and concentrated loads;

(D) diagram and explain how applied loads and forces are resisted in a structure and transferred to the Earth;

(E) diagram a simply supported beam subjected to loading conditions to determine reaction forces;

(F) sketch diagrams to determine the maximum shear and moment resulting in the beam;

(G) identify the different types of trusses, including simple, planar, and space frame trusses;

(H) diagram a truss subjected to loading conditions to determine reaction forces and identify the zero force members;

(I) explain why design loads are dictated by building codes; and

(J) describe potential impacts of a structural analysis for a project.

(12) The student explores concepts and calculations used by transportation engineers. The student is expected to:

(A) identify and describe various types of transportation engineering specializations such as rail, aviation, roadway, highway, and marine;

(B) research and explain the benefits of having a professional transportation engineering certification;

(C) research and explain the benefits of membership in a transportation engineering organization such as Institute for Transportation Engineers (ITE), American Society of Highway Engineers (ASHE), American Association of State Highway and Transportation Officials (AASHTO), and WTS International;

(D) determine stopping sight distance of a roadway given the design speed and grade;

(E) research and describe the impacts of transportation design elements, including grades, superelevation, design speed, friction factor, lane widths, vertical curves, horizontal curves, roadway classification, acceleration, and deceleration;

(F) analyze the level of service of a roadway to determine if operating conditions are adequate;

(G) identify and explain the components of a traffic impact analysis (TIA), including data collection summary, trip analysis, turn lane analysis, project phasing, and sight visibility analysis;

(H) research and identify methods of traffic data collection;

(I) collect and calculate traffic count data at a project site and analyze the results of the traffic count to determine peak hour trips and traffic mitigation;

(J) determine the peak hour trips generated by a given land use from a ITE Trip Generation Manual;

(K) research and describe traffic level of service for various roadways;

(L) determine if a turn lane is warranted based on peak hour trips and traffic volume; and

(M) describe potential impacts of a transportation analysis for a project.

(13) The student develops construction documents for a civil engineering project. The student is expected to:

(A) develop project construction documents that includes design plans, specifications, and a cost estimate for a civil engineering project;

(B) develop the analysis reports for a civil engineering project;

(C) generate a demolition sheet that contains existing topography, property lines, easements, utilities, rights-of-way, drainage infrastructure, and structures, and identifies items to be demolished;

(D) develop a fire protection plan for a project;

(E) generate a paving plan that shows the limits and types of pavement necessary for a project;

(F) generate a site plan that labels proposed improvements for a project;

(G) generate a site dimensional control plan containing measurements for all site improvements for a project;

(H) generate a grading plan that documents proposed elevations and topography in comparison to existing topography for a project;

(I) generate drainage plans that document the existing drainage patterns, proposed drainage plan, and drainage infrastructure for a project;

(J) generate a utility plan that documents existing and proposed utility types, locations, and materials for a project;

(K) generate an erosion control plan that identifies erosion control best management practices (BMP) defined by the Texas Commission on Environmental Quality (TCEQ) for a project; and

(L) explain the importance of a quality control review and complete a quality control review of the construction documents of the project.

(14) The student develops documents for support of the construction bid. The student is expected to:

(A) identify components of a bid tabulation, including item description, material quantity, unit measure, unit price, and total price;

(B) compare a project bid tabulation with corresponding construction documents to verify all items are included;

(C) create a project bid tabulation; and

(D) identify and compile the parts of civil engineering project manual.

(15) The student works as an individual and a team member to complete projects. The student is expected to:

(A) track team goals to verify completion of project milestones;

(B) explain various methods to resolve conflict within a project team;

(C) explain how leadership impacts project outcomes and team members; and

(D) evaluate team member performance and effectiveness in a project.

(16) The student researches and understands the code of ethics pertaining to civil engineering. The student is expected to:

(A) research and describe the impact of the State of Texas Engineering Practice Act; and

(B) analyze and discuss ethical case studies using Texas Administrative Code, Title 22, Part 6, Chapter 137, Subchapter C (relating to Professional Conduct and Ethics).

(17) The student understands the fundamental sustainable design approaches and practices in civil engineering projects. The student is expected to:

(A) research and describe sustainable building materials and methods;

(B) identify and explain the programs and certifications that establish design criteria for engineering projects such as Leadership in Energy and Environmental Design (LEED);

(C) explain how sustainable programs and certifications potentially impact the design elements and costs of a project;

(D) explain how design choices potentially impact human health, the environment, and the cost of a project; and

(E) explain how elements of the construction process potentially impact human health and the environment.

§127.417. Engineering Project Management (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. Recommended prerequisite: English II. Students shall be awarded one credit for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Engineering Project Management develop cursory knowledge and essential skills to lead an engineering team through the development and construction of a project. Students

assess project documentation for compliance with best management practices. They engage in project planning, risk management, team management, and stakeholder communication to ensure project completion, adherence to safety guidelines, and continuous improvement.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student discusses ethics pertaining to engineering. The student is expected to identify and discuss the importance of professionalism, standards of conduct, and ethics as defined by the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying.

(2) The student understands that there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define ideation and conceptualization and discuss the role these processes play in innovation and problem solving;

(D) explain the processes of selecting an idea or concept for detailed prototype design, development, and testing;

(E) describe the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the process of relevant experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) describe the purpose of effective communication of the engineering solution as obtained through the engineering design process to various audiences.

(3) The student explores and develops skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(4) The student understands the foundations of occupational safety and health. The student is expected to:

(A) explain and discuss the responsibilities of workers and employers to promote safety and health in the workplace and the rights of workers to a secure workplace;

(B) explain and discuss the importance of Occupational Safety and Health Administration (OSHA) standards and OSHA requirements for organizations, how OSHA inspections are conducted, and the role of national and state regulatory entities;

(C) explain the role industrial hygiene plays in occupational safety and explain various types of industrial hygiene hazards, including physical, chemical, biological, and ergonomic;

(D) identify and explain the appropriate use of types of personal protective equipment used in industry;

(E) discuss the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(F) describe types of electrical hazards in the workplace and the risks associated with these hazards and describe control methods to prevent electrical hazards in the workplace;

(G) analyze the hazards of handling, storing, using, and transporting hazardous materials and identify and discuss ways to reduce exposure to hazardous materials in the workplace;

(H) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and discuss how these resources are used to make decisions in the workplace;

(I) describe the elements of a safety and health program, including management leadership, worker participation, and education and training;

(J) explain the purpose and importance of written emergency action plans and fire protection plans and describe key components of each such as evacuation plans and emergency exit routes, list of fire hazards, and identification of emergency personnel;

(K) explain the components of a hazard communication program; and

(L) explain and give examples of safety and health training requirements specified by standard setting organizations.

(5) The student explores the methods and aspects of project management in relation to engineering projects. The student is expected to:

(A) identify and prioritize engineering tasks for an engineering project plan;

(B) identify and outline the critical path of a set of tasks in an engineering project;

(C) develop a project budget based on billable hours and engineering tasks in a project;

(D) track and maintain time spent on engineering tasks for a given project;

(E) generate a Gantt chart for an engineering project, including project tasks, time to complete tasks, critical path, and schedule of tasks;

(F) develop and implement a systematic folder structure for organizing project documents considering factors such as project phase, discipline, and document type;

(G) apply naming conventions consistently to all project documents to facilitate efficient identification and retrieval;

(H) research and describe best management practices such as quality control and quality assurance, risk management, and project management plan for an engineering project;

(I) evaluate an engineering project for adherence to local, state, and federal regulations;

(J) evaluate an engineering project for adherence to best management practices; and

(K) evaluate an engineering project for implementation of sustainable practices.

(6) The student explores processes involved in the construction phase of an engineering project. The student is expected to:

(A) identify parts of an engineering project manual associated with a construction bid, including bid schedule, bid tabulation, construction plan set, and material specifications;

(B) explain the bid process for a project, including timeline, value engineering, request for information (RFI), request for qualifications (RFQ), request for price (RFP), interview process, bid opening, bid evaluations, and bid award;

(C) develop a quantity take-off for an engineering project; and

(D) identify applicable materials based on the engineering project specifications to conduct a material quantity take-off.

(7) The student researches and identifies methods and divisions of project documentation. The student is expected to:

(A) compare shop drawings and construction documents to identify and rectify variances;

(B) identify and justify applicable material specifications for a given project;

(C) compile and organize material specifications to create a submittal log;

(D) analyze a construction drawing to develop applicable design questions and create an RFI document;

(E) identify and explain the permitting process for an engineering project;

(F) identify permitting stakeholders and explain stakeholder roles in the permitting process;

(G) identify permitting entities and create a permit request;

(H) identify and explain the purpose and parts of a change order for a project;

(I) develop a method of documentation to track project changes, including field changes, design changes, and change orders, and analyze cost and schedule impacts of project changes; and

(J) identify and draft applicable completion documents, including certificate of occupancy, temporary certificate of occupancy, field changes, as-built or plan of record documents, and engineer's certification of substantial completion.

(8) The student explores applicable federal, state, and local regulations as they pertain to engineering projects. The student is expected to:

(A) research federal regulatory agencies and describe the role federal regulatory agencies serve in relation to engineering projects such as the Environmental Protection Agency (EPA), Federal Aviation Administration (FAA), and Army Corps of Engineers;

(B) research state regulatory agencies such as the Texas Department of Transportation (TxDOT), Texas Commission on Environmental Quality (TCEQ), and the Texas Railroad Commission (TRC) and describe the role these agencies serve in relation to engineering projects;

(C) research local regulatory agencies such as cities and counties and describe the role local regulatory agencies serve in relation to engineering projects; and

(D) describe local codes and ordinances affecting construction and development activities.

(9) The student explores methods of risk management and the effects on engineering projects. The student is expected to:

(A) identify and describe various methods of risk management related to engineering projects;

(B) identify and analyze the potential risks in a project with respect to the project stakeholders;

(C) develop and communicate a job hazard analysis (JHA) for a given project task;

(D) identify factors of contingency related to an engineering project;

(E) create a contingency estimate analyzing events that can cause potential losses to a project; and

(F) present a risk management plan for a given project.

(10) The student examines components of value engineering practices in relation to an engineering project. The student is expected to:

(A) describe value engineering;

(B) identify and analyze common areas of engineering projects that are susceptible to value engineering;

(C) analyze an existing project design and cost estimate to identify potential cost saving areas;

(D) describe an opinion of probable cost (OPC) associated with an engineering project;

(E) generate an OPC for an engineering project, including construction mobilization, material cost, material quantities, waste disposal, contingency, and total price; and

(F) create a cost-benefit analysis of an engineering project that compares the monetary cost of the project to the benefit to end user.

(11) The student demonstrates effective leadership and communications skills necessary to manage engineering projects. The student is expected to:

(A) identify and describe the various team roles for an engineering project;

(B) research and describe various project management methodologies;

(C) create a schedule of roles for team members in an engineering project;

(D) conduct an effective kick-off meeting to communicate the project management plan for a given engineering project;

(E) evaluate how project team dynamics impact the successful completion of a project;

(F) prepare and document effective meeting agendas;

(G) record, prepare, and distribute clear and accurate meeting minutes;

(H) research and describe effective leadership qualities;

(I) research and identify examples of effective leadership styles;

(J) identify and describe personal leadership styles and strengths; and

(K) evaluate how student leadership styles impact the success of the project team.

§127.418. Architectural Engineering (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 11 and 12. Prerequisite: Civil Engineering I. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Architectural Engineering use principles of engineering and design tools to create innovative, functional, and sustainable buildings. Students develop cursory knowledge and essential skills to understand the design of buildings, including the mechanical, electrical, plumbing, and structural systems, while also planning the construction process. They engage in project planning, building and system analysis, site investigation, and the integration of sustainable design and construction practices for an architectural engineering project.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how to implement an engineering design process to develop a product or solution. The student is expected to:

(A) describe and implement the stages of an engineering design process to construct a model;

(B) explain how factors, including complexity, scope, resources, ethics, regulations, manufacturability, maintainability, and technology, impact stages of the engineering design process;

(C) explain how stakeholders impact an engineering design process; and

(D) analyze how failure is often an essential component of the engineering design process.

(3) The student explores the methods and aspects of project management in relation to projects. The student is expected to:

(A) research and explain the process and phases of project management, including initiating, planning, executing, and closing;

(B) explain the roles and responsibilities of team members, including project managers and leads;

(C) research and evaluate methods and tools available for managing a project;

(D) discuss the importance of developing and implementing a system for the organization of project documentation such as file naming conventions, document release control, and version control;

(E) describe how project requirements, constraints, and deliverables impact the project schedule and influence and are influenced by an engineering design;

(F) explain how a project budget, including materials, equipment, and labor, is developed and maintained; and

(G) describe the importance of management of change (MOC) and how MOC applies to project planning.

(4) The student explores the origin and application of basic building types. The student is expected to:

(A) identify and describe the fundamental parts of a building, including foundations, floors, walls, roof, and utility systems;

(B) identify and describe the visual design elements of various building types, including residential, commercial, institutional, and industrial buildings; and

(C) research and describe the evolution of the built space and development of building forms.

(5) The student understands the properties of common building materials and construction methods. The student is expected to:

(A) identify and describe common building materials such as wood, masonry, concrete, metal, glass, aggregate, and plastic;

(B) identify and describe common roofing materials such as thatch, wood, metal, sod, and asphalt;

(C) describe traditional construction methods such as wood framing, tilt-wall, masonry, and steel;

(D) describe contemporary construction methods such as prefabricated, modular, and additive construction (3D printing);

(E) identify and describe standard building methods such as casting, cutting, drilling, driving, and fastening for the construction of buildings;

(F) research and describe resilient building materials, methods, and costs; and

(G) describe how building material selection is impacted influenced by certifications such as Leadership in Energy and Environmental Design (LEED) or Energy Star.

(6) The student understands the application of codes and regulations to building projects. The student is expected to:

(A) explain the purpose of local building codes, including public health and safety, structural, and utility codes;

(B) describe land use regulations to identify zoning ordinances and allowable uses of real property;

(C) describe how zoning regulations are used to control land use and development;

(D) identify standard accessibility features such as ramps, elevators, parking, handrails, and fire alarm horn strobe as specified in codes and regulations such as the American Disability Act (ADA) and the Texas Accessibility Standards (TAS);

(E) explain how codes and building regulations constrain aspects of building design, including the structure, site design, utilities, and building usage;

(F) explain how codes and building regulations constrain aspects of building construction, including the structure, site construction, utilities, and building usage; and

(G) classify a building according to its use type, occupancy, and construction type using the International Building Code.

(7) The student explores the various building systems. The student is expected to:

(A) identify and describe various building envelopes such as tilt-wall, glazing, brick, and Exterior Insulation Finishing System (EIFS);

(B) describe the components of building envelopes, including foundation, walls, wall openings, roofs, roof penetrations, insulation, and building membranes;

(C) research and describe different types of insulating materials;

(D) describe different types of windows and doors;

(E) identify the main components and describe the purpose of mechanical systems within a building, including heating ventilation and air conditioning (HVAC), air handler, boiler, fire protection and suppression, lift, chilled water equipment, and emergency power systems;

(F) describe how programs and certifications such as LEED potentially impact the selection of building systems;

(G) identify the main components and describe the purpose of electrical systems within a building, including meters, panels, lighting, receptacles, transformers, generators, and low-voltage systems; and

(H) identify the main components and describe the purpose of plumbing systems within a building, including meters, main supply lines, branch lines, sewer lines, traps, risers, fire suppression, appurtenances, and fixtures.

(8) The student examines building foundations and structures. The student is expected to:

(A) identify and analyze the various types of building foundations, including slab on grade, pier and beam, spread footing, mat footing, drilled piers, pylons, waffle slab, and post-tension slab;

(B) classify a soil sample according to grain size and plasticity;

(C) calculate the plasticity index of a soil sample;

(D) determine the united soil classification system designation from a site soil sample analysis;

(E) describe the forces common to structural engineering calculations, including gravity, tension, compression, flexure, and torsion;

(F) describe the loads common to structural engineering calculations, including dead load, live load, environmental, and other load paths such as lateral and concentrated;

(G) diagram and explain how applied loads and forces are resisted in a structure and transferred to the Earth;

(H) diagram a simply supported beam subjected to loading conditions to determine reaction forces;

(I) sketch diagrams to determine the maximum shear and moment resulting in the beam;

(J) identify the different types of trusses, including simple, planar, and space frame trusses;

(K) diagram a truss subjected to loading conditions to determine reaction forces and identify the zero force members;

(L) explain why design loads are dictated by building codes;

(M) identify the composition and describe the ratios of ingredients in different concrete mixtures;

(N) describe the purpose of various concrete admixtures, including air entrainer, reducer, retarder, and accelerator;

(O) explain why various admixtures are selected for a project such as curing time, ambient climate, and permeability;

(P) conduct concrete compression and splitting-tension tests and compare strength and failures in a concrete mixture; and

(Q) analyze a concrete mixture by performing a slump test.

(9) The student designs and develops plans for the building systems. The student is expected to:

(A) develop a stormwater management system for a building that includes roof drainage calculations, roof drain design, and downspout sizing and location;

(B) design ingress and egress for a building that complies with local, state, and federal codes and regulations;

(C) develop building design and engineering plans that incorporate energy conservation techniques;

(D) recommend and defend an appropriate foundation design for a building type;

(E) design, modify, and plan structures using 3D software;

(F) construct building drawings using advanced computer-aided design drafting skills;

(G) create three-dimensional views of a building design;

(H) create three-dimensional solid models of the building;

(I) design and present a final effective building design for critique;

(J) develop preliminary drawings of a building or structural design;

(K) develop a site plan using maximum orientation of the building relative to views, sun, and wind direction;

(L) draw schematic site plans, floor plans, roof plans, building elevations, sections, and perspectives using design development techniques;

(M) draw scaled wall thickness plans, interior elevations, and sections;

(N) develop details, floor and wall sections, ceiling and roof sections, door and window sections, and other sections as required within a building design;

(O) review and revise draft construction documents to incorporate results from structural analysis such as beam, truss, and foundation calculations conducted for the project; and

(P) review and revise draft construction documents to incorporate results from building system analysis such as mechanical, electrical, and plumbing calculations conducted for the project.

(10) The student designs and develops plans for the building site. The student is expected to:

(A) identify and describe various site constraints, including utilities, grading, drainage, transportation access, environmental, regulatory requirement, and rights-of-way constraints;

(B) explain the purpose of low impact development techniques in site development such as to reduce the impact on stormwater runoff quantity and quality;

(C) develop preliminary drawings of a building site design;

(D) develop building site design and engineering plans that integrate solutions to site constraints as appropriate;

(E) describe how soil characteristics impact building design;

(F) determine the type, sizing, and placement of site features, including parking lots, entrance and exits road, pedestrian and handicap access, and storm water facilities, that comply with local codes and regulations;

(G) evaluate a site to appropriately locate and orient a building or structure;

(H) develop site drawings using advanced computer-aided design drafting skills; and

(I) design and present a final effective site design for critique.

(11) The student explores construction phase processes for a building design project. The student is expected to:

(A) calculate quantities of building components such as the total square units of wall covering, the total cubic units of concrete, linear units of wire, and doors and windows;

(B) develop a material quantity take-off for a building project;

(C) develop an Opinion of Probable Cost (OPC) for a building project;

(D) document elements of the building construction that comply with design criteria such as those outlined in LEED;

(E) identify components of a bid tabulation, including item description, material quantity, unit measure, unit price, and total price;

(F) compare a project bid tabulation with corresponding construction documents to verify all items are included;

(G) create a project bid tabulation;

(H) identify and describe the parts of a construction project manual, including invitation to bidders, instruction for bidders, project information, construction contracts, bid tabulation, maintenance bonds, performance bonds, payment bonds, specifications, insurance certificates, and legal requirements; and

(I) develop an organizational chart and Gantt chart for the construction of a project.

§127.419. Surveying and Geomatics (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(1) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grades 10-12. Prerequisite: Algebra I. Recommended prerequisites: Geometry and Introduction to Computer-Aided Design and Drafting. Students shall be awarded two credits for successful completion of this course.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Students enrolled in Surveying and Geomatics are introduced to the principles and practices essential to the field of survey-

ing. Throughout this course students investigate different tools, applications, and techniques used to capture and process geospatial data. They also use functional mathematics crucial to the profession. Additionally, the course emphasizes the importance of visual representations of data in multiple mediums, ethical considerations, and the legal or regulatory impact of surveying on the community and society.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student understands that there are different stages of the engineering design process and the importance of working through each stage as part of an iterative process. The student is expected to:

(A) explain the importance of defining an engineering problem as an initial step in the engineering design process;

(B) describe the research stage of the engineering design process;

(C) define ideation and conceptualization and discuss the role these processes play in innovation and problem solving;

(D) explain the processes of selecting an idea or concept for detailed prototype design, development, and testing;

(E) describe the purpose of non-technical drawings, technical drawings, models, and prototypes in designing a solution to an engineering problem;

(F) describe the process of relevant experimental design, conducting tests, collecting data, and analyzing data to evaluate potential solutions;

(G) explain how the engineering design process is iterative and the role reflection plays in developing an optimized engineering solution; and

(H) describe the purpose of effective communication of the engineering solution as obtained through the engineering design process to various audiences.

(2) The student explores and develops skills to solve problems, make decisions, and manage a project. The student is expected to:

(A) discuss strategies for managing time, setting deadlines, and prioritizing to accomplish goals;

(B) identify constraints and describe the importance of planning around constraints, including budgets, resources, and materials;

(C) define milestones and deliverables and explain the advantages of dividing a large project into smaller milestones and deliverables;

(D) identify different types of communication and explain how different types of communication lead to successful teamwork on a shared project in a professional setting; and

(E) identify strategies to solve problems and describe how problem solving is utilized to accomplish personal and team objectives.

(3) The student understands the foundations of occupational safety and health. The student is expected to:

(A) explain and discuss the responsibilities of workers and employers to promote safety and health in the workplace and the rights of workers to a secure workplace;

(B) explain and discuss the importance of Occupational Safety and Health Administration (OSHA) standards and OSHA requirements for organizations, how OSHA inspections are conducted, and the role of national and state regulatory entities;

(C) explain the role industrial hygiene plays in occupational safety and explain various types of industrial hygiene hazards, including physical, chemical, biological, and ergonomic;

(D) identify and explain the appropriate use of types of personal protective equipment used in industry;

(E) discuss the importance of safe walking and working surfaces in the workplace and best practices for preventing or reducing slips, trips, and falls in the workplace;

(F) describe types of electrical hazards in the workplace and the risks associated with these hazards and describe control methods to prevent electrical hazards in the workplace;

(G) analyze the hazards of handling, storing, using, and transporting hazardous materials and identify and discuss ways to reduce exposure to hazardous materials in the workplace;

(H) identify workplace health and safety resources, including emergency plans and Safety Data Sheets, and discuss how these resources are used to make decisions in the workplace;

(I) describe the elements of a safety and health program, including management leadership, worker participation, and education and training;

(J) explain the purpose and importance of written emergency action plans and fire protection plans and describe key components of each such as evacuation plans and emergency exit routes, list of fire hazards, and identification of emergency personnel;

(K) explain the components of a hazard communication program; and

(L) explain and give examples of safety and health training requirements specified by standard setting organizations.

(4) The student examines the functional mathematics of surveying. The student is expected to:

(A) calculate central tendencies of a given data set, including mean, median, and mode;

(B) calculate standard deviation of a given data set;

(C) identify parts of a normal distribution curve;

(D) define the Empirical Rule and analyze the distribution of a data set using the Empirical Rule;

(E) define systematic and random error;

(F) identify and describe the relationship between accuracy and precision;

(G) identify the types and properties of various polygons;

(H) solve for the parts of a triangle, including Pythagorean theorem, sine, cosine, tangent, arcsine, arccosine, and arctangent;

(I) identify the properties of circles;

(J) solve for the parts of a unit circle, including diameter, radius, circumference, area, chord, arclength, delta, and tangent;

(K) identify and solve for linear functions, including standard form, slope-intercept form, point-slope form, and the distance between two points, on a Cartesian Coordinate System; and

(L) identify and solve for volumetric calculations of three-dimensional shapes, including a cylinder, sphere, rectangular prisms, trapezoidal prisms, and triangular prisms.

(5) The student researches and understands global positioning systems (GPS) used in surveying. The student is expected to:

(A) identify and explain data terminology related to GPS such as latitude, longitude, datum, ellipsoid, geoid, orthometric height, World Geodetic System 1984, Earth Centered Earth Fixed (ECEF), 3D coordinate geometry, and state plane coordinate system;

(B) explain the different types and applications of GPS surveying, including static, differential, and real-time kinematic (RTK);

(C) tie down a point and derive a geographic latitude and longitude coordinate using GPS;

(D) identify and explain GPS components, including the space segment, control segment, and the user segment;

(E) describe the functions of a GPS satellite;

(F) describe the functions of GPS ground stations;

(G) describe the functions of GPS receivers; and

(H) generate a map using geodetic coordinates.

(6) The student researches and understands the industry standard methods and means of collecting various topographical data used in the civil engineering and construction professions. The student is expected to:

(A) research and explain the components of optomechanical equipment, including vertical and horizontal plates and optics;

(B) explain the types of optomechanical equipment, including theodolite, level, and total station, and their application;

(C) explain methods of remote sensing, including unmanned aerial vehicle (UAV), light detection and ranging (LiDAR), sonar, ground penetrating radar, underwater remotely operated vehicle (ROV), photogrammetry, and gravity satellite;

(D) identify the tools used to make distance measurements, including steel tape, electric distance meter, pacing, odometer, stadia, and estimating;

(E) explain the various methods to measure the distance between two points on the surface of the Earth;

(F) measure the distance between two points on the surface of the Earth using different methods and tools;

(G) compare the data collected from different methods used to measure the distance between two points on the surface of the Earth for accuracy;

(H) identify the tools used to make angular measurements, including protractor, compass, theodolite, total station, and estimating;

(I) explain the various methods to measure the angle between two vectors;

(J) measure the angle between two vectors using different methods and tools;

(K) compare the data collected from different methods used to measure the angles between two vectors for accuracy;

(L) describe the use of control points and National Geodetic Survey (NGS) monuments;

(M) identify the tools used to measure elevation, including level, theodolite, total station, barometer, and estimating;

(N) measure and calculate the height of an object using a theodolite;

(O) establish the elevation of a point assuming the elevation of a relative point is zero using various methods and tools;

(P) compare the data collected from different methods used to measure elevation between two points for accuracy;

(Q) identify and adhere to regulations of UAV piloting and control specified by the Federal Aviation Administration Small UAS Rule (Part A107); and

(R) explain the purposes of specialized surveys used in engineering, including engineering topographic, control, construction, boundary, hydrographic, optical tooling, American Land Title Association (ALTA), photogrammetric, and as-built survey.

(7) The student records meta-data associated with surveying measurements and data collection. The student is expected to:

(A) create and maintain field notes within a comprehensive field book that includes a cover page and field data;

(B) describe the necessary components of a field book cover page, including weather data, project site data, personnel data, equipment data, and type of survey conducted; and

(C) record surveying information in a field book, including differential level notes, collected horizontal and vertical angles, site sketches, and topographic data.

(8) The student researches and understands the industry standard methods and means of analyzing various topographical data used in the civil engineering and construction professions. The student is expected to:

(A) explain the process to generate a control survey;

(B) identify and explain symbols found on survey drawings; and

(C) identify and describe software used to create drawings and analyze survey data.

(9) The student develops and communicates visual representations of topographical data used in civil engineering and construction documentation and presentations. The student is expected to:

(A) explain the process of drafting a construction document to scale;

(B) determine and demonstrate which scale best fits a standard size drawing sheet;

(C) explain the relationship between a construction document's specifications, plans, legend, and scale;

(D) explain the difference between grid and surface distances;

(E) identify the local scale factor that transforms collected grid distances to surface distances for a given survey;

(F) generate a scaled topography map using collected field data;

(G) create a surface profile from a baseline drawn on a topographic map; and

(H) stake out points from design files, maps, or real-property descriptions.

(10) The student explores how a practicing surveyor follows in the footsteps of the original surveyor. The student is expected to:

(A) explain why and how surveyors defer to the work of existing surveys;

(B) define boundary monumentation;

(C) research and explain natural and artificial monuments;

(D) explain the methods to adjust real-property boundaries for the change in natural monuments over time, including riparian and littoral boundaries;

(E) interpret a legal description of a real property;

(F) identify an original survey boundary by conducting land record research using the Texas General Land Office (GLO);

(G) explain the historical significance of land grants in Texas;

(H) explain how a boundary survey protects the public;

(I) create a property boundary drawing using collected field data; and

(J) explain the dignity of calls, including natural objects, artificial objects, courses, distances, and acreage, as specified in Texas Administrative Code, Title 31, Part 1, Chapter 7, §7.5 (relating to Dignity of Calls).

(11) The student understands the different methods of measurements and associated errors. The student expected to:

(A) define the different units of linear measurement, including U.S. feet, international feet, chains, rod, mile, fathom, furlong, varas, and metric units, commonly used in the surveying and civil engineering industry;

(B) define the different units of angular measurement, including vertical angles, horizontal angles, bearings, azimuths, degrees-minutes-seconds, decimal degrees, seconds of arc, and gradians;

(C) define the different units of volumetric measurement, including cubic feet, cubic yards, tons, and acre-feet;

(D) calculate and define area measurements such as acre, hectare, square feet, square mile, league, or sitio;

(E) convert linear, angular, and area measurements between different units;

(F) determine a change in elevation between two or more points by performing a differential level loop;

(G) measure the distance between two or more points using industry acceptable methods such as taping, electronic distance meter, total station, pacing, odometer, tacheometry, GPS, and stadia;

(H) compare the errors from two or more methods of calculating the distance between two or more points; and

(I) calculates various types of errors associated with survey data.

(12) The student researches and understands surveying and geomatics throughout history. The student is expected to:

(A) explain how Eratosthenes first derived the circumference of the Earth;

(B) research and describe the change in methods and precision used to calculate the circumference of the Earth; and

(C) describe the surveying that contributed to great works of civil engineering before and after the Age of Exploration.

(13) The student researches and understands the code of ethics pertaining to civil engineering and surveyors. The student is expected to:

(A) research and identify the legal definitions and descriptions surveyors use to delineate and report survey data; and

(B) research and identify engineering ethics established by the Texas Engineering Practice Act and rules concerning the practice of engineering and surveying.

§127.452. Practicum in Engineering (Two Credits), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. Prerequisites: Algebra I and Geometry and a minimum of two credits with at least one course in a Level 2 or higher course from the Engineering Career Cluster.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards, industry-relevant technical knowledge, and college and career readiness skills for students to further their education and succeed in current and emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Practicum in Engineering is designed to give students supervised practical application of knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experiences such as employment, independent study, internships, assistantships, mentorships, or laboratories. To prepare for careers in engineering, students must attain academic knowledge and skills, acquire technical knowledge and skills related to the workplace, and develop knowledge and skills regarding career opportunities, entry requirements, and industry expectations. To prepare for success,

students need opportunities to learn, reinforce, apply, and transfer their knowledge and skills and technologies in a variety of settings.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how a professional engineer serves the local and global community. The student is expected to:

(A) research and identify student and professional engineering organizations and the benefits of membership such as networking platforms, training and educational opportunities, and participating in community initiatives;

(B) explain an engineer's role and how various engineering roles serve the organization, community, and society; and

(C) evaluate how the work of student or professional engineering organizations impact the local or global community such as recommended practices and issuing standards.

(3) The student uses critical thinking and problem solving in the work-based learning experience. The student is expected to:

(A) conduct technical research to gather information, identify gaps, and make decisions in the work-based learning experience;

(B) develop creative and innovative solutions to problems in the work-based learning experience;

(C) analyze and compare alternative designs for an effective solution to a problem in the work-based learning experience; and

(D) evaluate and present solutions to problems in the work-based learning experience.

(4) The student understands and demonstrates how effective leadership and teamwork skills enable the accomplishment of goals and objectives. The student is expected to:

(A) analyze leadership characteristics such as trustworthiness, positive attitude, integrity, and work ethic;

(B) explain and demonstrate effective characteristics of teamwork;

(C) explain and demonstrate responsibility for shared group and individual work tasks in the work-based learning experience;

(D) describe and analyze how strategies such as meeting deadlines, showing respect for all individuals, and communicating clearly and timely contribute to effective working relationships and accomplishing objectives; and

(E) research and identify opportunities to participate in extracurricular engineering activities.

(5) The student demonstrates oral and written communication skills in delivering and receiving information and ideas. The student is expected to:

(A) apply appropriate content knowledge, technical concepts, and vocabulary to analyze information and follow directions;

(B) use professional communication skills such as using technical terminology, email etiquette, and following the organization or team communication plan and hierarchy when delivering and receiving information in the work-based learning experience;

(C) identify and analyze information contained in informational texts, internet sites, or technical materials in the work-based learning experience;

(D) describe and analyze verbal and nonverbal cues and behaviors such as body language, tone, and interrupting to enhance communication in the work-based learning experience; and

(E) apply active listening skills to receive and clarify information in the work-based learning experience.

(6) The student reflects on the work-based learning experience to prepare for postsecondary and employment success. The student is expected to:

(A) assess and evaluate personal strengths and weaknesses in knowledge and skill proficiency and contributions to a project related to the work-based learning experience;

(B) develop and maintain a professional portfolio to include:

(i) attainment of technical skill competencies;

(ii) licensures or certifications;

(iii) recognitions, awards, and scholarships;

(iv) extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;

(v) abstract of key points of the practicum;

(vi) resume;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(C) present the professional portfolio to interested stakeholders.

(7) The student develops a presentation describing the culmination of skills and knowledge gained from the work-based learning experience. The student is expected to:

(A) develop a professional presentation to display and communicate the work-based learning experience, including goals and objectives, levels of achievement, skills and knowledge gained, areas for improvement and personal growth, challenges encountered throughout the experience, and a plan for future goals;

(B) identify an appropriate audience and coordinate the presentation of findings related to the work-based learning experience;

(C) present findings in a professional manner using concise language, engaging content, relevant media, and clear speech; and

(D) analyze feedback received from a presentation.

§127.453. Extended Practicum in Engineering (One Credit), Adopted 2025.

(a) Implementation.

(1) The provisions of this section shall be implemented by school districts beginning with the 2025-2026 school year.

(2) School districts shall implement the employability skills student expectations listed in §127.15(d)(2) of this chapter (relating to Career and Technical Education Employability Skills) as an integral part of this course.

(b) General requirements. This course is recommended for students in Grade 12. The practicum course is a paid or unpaid capstone experience for students participating in a coherent sequence of career and technical education courses in the Engineering Career Cluster. Prerequisites: Algebra I and Geometry and a minimum of two credits with at least one course in a Level 2 or higher course from the Engineering Career Cluster. This course must be taken concurrently with Practicum in Engineering and may not be taken as a stand-alone course. Students shall be awarded one credit for successful completion of this course. A student may repeat this course once for credit provided that the student is experiencing different aspects of the industry and demonstrating proficiency in additional and more advanced knowledge and skills.

(c) Introduction.

(1) Career and technical education instruction provides content aligned with challenging academic standards and relevant technical knowledge and skills for students to further their education and succeed in current or emerging professions.

(2) The Engineering Career Cluster focuses on planning, designing, testing, building, and maintaining machines, structures, materials, systems, and processes using empirical evidence and science, technology, and math principles. This career cluster includes occupations ranging from mechanical engineer and drafter to electrical engineer and mapping technician.

(3) Extended Practicum in Engineering is designed to give students supervised practical application of previously studied knowledge and skills. Practicum experiences can occur in a variety of locations appropriate to the nature and level of experience.

(4) Students are encouraged to participate in extended learning experiences such as career and technical student organizations and other organizations that foster leadership and career development in the profession such as student chapters of related professional associations.

(5) Statements that contain the word "including" reference content that must be mastered, while those containing the phrase "such as" are intended as possible illustrative examples.

(d) Knowledge and skills.

(1) The student researches and describes ethics pertaining to engineering. The student is expected to explain how engineering ethics as defined by the Texas Board of Professional Engineers and Land Surveyors apply to engineering practice.

(2) The student understands how a professional engineer serves the local and global community. The student is expected to:

(A) research and identify student and professional engineering organizations and the benefits of membership such as networking platforms, training and educational opportunities, and participating in community initiatives;

(B) explain an engineer's role and how various engineering roles serve the organization, community, and society; and

(C) evaluate how the work of student or professional engineering organizations impact the local or global community such as recommended practices and issuing standards.

(3) The student uses critical thinking and problem solving in the work-based learning experience. The student is expected to:

(A) conduct technical research to gather information, identify gaps, and make decisions in the work-based learning experience;

(B) develop creative and innovative solutions to problems in the work-based learning experience;

(C) analyze and compare alternative designs for an effective solution to a problem in the work-based learning experience; and

(D) evaluate and present solutions to problems in the work-based learning experience.

(4) The student understands and demonstrates how effective leadership and teamwork skills enable the accomplishment of goals and objectives. The student is expected to:

(A) analyze leadership characteristics such as trustworthiness, positive attitude, integrity, and work ethic;

(B) explain and demonstrate effective characteristics of teamwork;

(C) explain and demonstrate responsibility for shared group and individual work tasks in the work-based learning experience;

(D) describe and analyze how strategies such as meeting deadlines, showing respect for all individuals, and communicating clearly and timely contribute to effective working relationships and accomplishing objectives; and

(E) research and identify opportunities to participate in extracurricular engineering activities.

(5) The student demonstrates oral and written communication skills in delivering and receiving information and ideas. The student is expected to:

(A) apply appropriate content knowledge, technical concepts, and vocabulary to analyze information and follow directions;

(B) use professional communication skills such as using technical terminology, email etiquette, and following the organization or team communication plan and hierarchy when delivering and receiving information in the work-based learning experience;

(C) identify and analyze information contained in informational texts, internet sites, or technical materials in the work-based learning experience;

(D) describe and analyze verbal and nonverbal cues and behaviors such as body language, tone, and interrupting to enhance communication in the work-based learning experience; and

(E) apply active listening skills to receive and clarify information in the work-based learning experience.

(6) The student reflects on the work-based learning experience to prepare for postsecondary and employment success. The student is expected to:

(A) assess and evaluate personal strengths and weaknesses in knowledge and skill proficiency and contributions to a project related to the work-based learning experience;

(B) develop and maintain a professional portfolio to include:

(i) attainment of technical skill competencies;

(ii) licensures or certifications;

(iii) recognitions, awards, and scholarships;

(iv) extended learning experiences such as community service and active participation in career and technical student organizations and professional organizations;

(v) abstract of key points of the practicum;

(vi) resume;

(vii) samples of work; and

(viii) evaluation from the practicum supervisor; and

(C) present the professional portfolio to interested stakeholders.

(7) The student develops a presentation describing the culmination of skills and knowledge gained from the work-based learning experience. The student is expected to:

(A) develop a professional presentation to display and communicate the work-based learning experience, including goals and objectives, levels of achievement, skills and knowledge gained, areas for improvement and personal growth, challenges encountered throughout the experience, and a plan for future goals;

(B) identify an appropriate audience and coordinate the presentation of findings related to the work-based learning experience;

(C) present findings in a professional manner using concise language, engaging content, relevant media, and clear speech; and

(D) analyze feedback received from a presentation.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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CHAPTER 130. TEXAS ESSENTIAL KNOWLEDGE AND SKILLS FOR CAREER AND TECHNICAL EDUCATION

(Editor's note: In accordance with Texas Government Code, §2002.014, which permits the omission of material which is "cumbersome, expensive, or otherwise inexpedient," the Figure: 19 TAC Chapter 130 - Preamble is not included in the print version of the Texas Register. The figure is available in the on-line version of the July 25, 2025, issue of the Texas Register.)

The State Board of Education (SBOE) adopts the repeal of §§130.1 - 130.12, 130.15 - 130.32, 130.41-130.72, 130.81 - 130.127, 130.131 - 130.144, 130.180 - 130.182, 130.184 - 130.190, 130.271 - 130.276, 130.279 - 130.287, 130.301 - 130.307, 130.311 - 130.318, 130.351 - 130.367, 130.381 - 130.383, 130.385 - 130.389, 130.441 - 130.447, 130.449 - 130.466, and 130.485 - 130.491, concerning Texas Essential Knowledge and Skills (TEKS) for career and technical education (CTE). The repeals are adopted without changes to the proposed text as published in the February 28, 2025 issue of the *Texas Register* (50 TexReg 1625) and will not be republished. The repeals move the TEKS to 19 TAC Chapter 127 in order to ensure that all CTE TEKS are in the same chapter in administrative rule.

REASONED JUSTIFICATION: In accordance with statutory requirements that the SBOE identify by rule the essential knowledge and skills of each subject in the required curriculum, the SBOE follows a board-approved cycle to review and revise the essential knowledge and skills for each subject.

The TEKS for courses associated with 14 CTE career clusters are codified by subchapter in 19 TAC Chapters 127 and 130. In December 2020, the SBOE began initial steps to prepare for the review and revision of CTE courses in programs of study for the education and training; health science; and science, technology, engineering, and mathematics career clusters. Two additional courses eligible to satisfy a graduation requirement in science were also part of the review. The board approved for second reading and final adoption new TEKS for these courses in November 2021 and January, April, and June 2022.

At the November 2023 SBOE meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in career preparation and entrepreneurship, which became effective February 13, 2024, and were implemented beginning in the 2024-2025 school year. At the April 2024 meeting, the board approved new CTE TEKS in 19 TAC Chapter 127 for courses in agribusiness, animal science, plant science, aviation maintenance, and engineering that will be implemented beginning in the 2025-2026 school year.

Due to the structure of 19 TAC Chapter 130, there are not enough sections to add new CTE courses under consideration in their assigned subchapters. To accommodate the addition of new and future courses, the board began the process of moving the CTE TEKS from Chapter 130 to Chapter 127 in order to keep all the TEKS together in administrative rule and avoid confusion. The related implementation sections are being repealed, and implementation information is being added to each individual course.

The proposed repeal of CTE courses in 19 TAC Chapter 130 was approved for first reading and filing authorization at the January 2025 meeting. At the April 2025 SBOE meeting, the board postponed second reading and final adoption of the proposed repeal.

The following figure provides a crosswalk between the current TEKS in Chapters 130 and the new location of those TEKS in Chapter 127. The adopted new sections can be found in the Adopted Rules section of this issue of the *Texas Register*.

Figure: Crosswalk-Preamble

The SBOE approved the repeals for first reading and filing authorization at its January 31, 2025 meeting and for second reading and final adoption at its June 27, 2025 meeting.

In accordance with TEC, §7.102(f), the SBOE approved the repeals for adoption by a vote of two-thirds of its members to specify an effective date earlier than the beginning of the 2025-2026 school year. The earlier effective date will ensure the TEKS are available in their new location in time for districts of innovation

with an earlier school start date to implement at the beginning of the school year districts. The effective date is August 1, 2025.

SUMMARY OF COMMENTS AND RESPONSES: The public comment period on the proposal began February 28, 2025, and ended at 5:00 p.m. on March 31, 2025. The SBOE also provided an opportunity for registered oral and written comments at its April and June 2025 meetings in accordance with the SBOE board operating policies and procedures. No public comments were received.

SUBCHAPTER A. AGRICULTURE, FOOD, AND NATURAL RESOURCES

19 TAC §§130.1 - 130.12, 130.15 - 130.32

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

TRD-202502387
Cristina De La Fuente-Valadez
Director, Rulemaking
Texas Education Agency
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For further information, please call: (512) 475-1497

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SUBCHAPTER B. ARCHITECTURE AND CONSTRUCTION

19 TAC §§130.41 - 130.72

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER C. ARTS, AUDIO/VIDEO TECHNOLOGY, AND COMMUNICATIONS

19 TAC §§130.81 - 130.127

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER D. BUSINESS MANAGEMENT AND ADMINISTRATION

19 TAC §§130.131 - 130.144

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER F. FINANCE

19 TAC §§130.180 - 130.182, 130.184 - 130.190

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER J. HUMAN SERVICES

19 TAC §§130.271 - 130.276, 130.279 - 130.287

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER K. INFORMATION TECHNOLOGY

19 TAC §§130.301 - 130.307, 130.311 - 130.318

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

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SUBCHAPTER M. MANUFACTURING

19 TAC §§130.351 - 130.367

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

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SUBCHAPTER N. MARKETING

19 TAC §§130.381 - 130.183, 130.185 - 130.389

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

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SUBCHAPTER P. TRANSPORTATION, DISTRIBUTION, AND LOGISTICS

19 TAC §§130.441 - 130.447, 130.449 - 130.466

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER Q. ENERGY

19 TAC §§130.485 - 130.491

STATUTORY AUTHORITY. The repeals are adopted under Texas Education Code (TEC), §7.102(c)(4), which requires the State Board of Education (SBOE) to establish curriculum and graduation requirements; TEC, §28.002(a), which identifies the subjects of the required curriculum; and TEC, §28.002(c), which requires the SBOE to identify by rule the essential knowledge and skills of each subject in the required curriculum that all students should be able to demonstrate and that will be used in evaluating instructional materials and addressed on the state assessment instruments.

CROSS REFERENCE TO STATUTE. The repeals implement Texas Education Code, §7.102(c)(4) and §28.002(a) and (c).

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cristina De La Fuente-Valadez
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Texas Education Agency
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PART 7. STATE BOARD FOR EDUCATOR CERTIFICATION

CHAPTER 250. ADMINISTRATION

SUBCHAPTER B. RULEMAKING PROCEDURES

19 TAC §250.20

The State Board for Educator Certification (SBEC) adopts the amendment to 19 Texas Administrative Code (TAC) §250.20, concerning petition for adoption of rules or rule changes. The amendment to §250.20 is adopted without changes to the proposed text as published in the March 14, 2025 issue of the *Texas Register* (50 TexReg 1894) and will not be republished. The

adopted amendment updates the SBEC's petition for adoption of rule change procedures to align with statute.

REASONED JUSTIFICATION: Texas Government Code (TGC), §2001.021, requires that procedures to petition for the adoption of rule changes be adopted by rule. To comply with statute, the SBEC rules in 19 TAC Chapter 250, Subchapter B, establish procedures for SBEC petition for rulemaking in §250.20, Petition for Adoption of Rules or Rule Changes.

The adopted amendment to §250.20 strikes subsection (b)(1) and (2) and adds new subsection (b) to align with statute and allow the SBEC to address petitions for rulemaking more effectively, by either denying or initiating rulemaking within the 60-day required window.

SUMMARY OF PUBLIC COMMENTS AND RESPONSES: The public comment period on the proposal began March 14, 2025, and ended April 14, 2025. The SBEC also provided an opportunity for registered oral and written comments on the proposal at the April 25, 2025 meeting's public comment period in accordance with the SBEC board operating policies and procedures. No public comments were received on the proposal.

The State Board of Education (SBOE) took no action on the review of the amendment to §250.20 at the June 27, 2025 meeting.

STATUTORY AUTHORITY. The amendment is adopted under Texas Education Code (TEC), §21.035(b), which requires the Texas Education Agency (TEA) to provide the State Board for Educator's (SBEC's) administrative functions and services; TEC, §21.041(a), which authorizes the SBEC to adopt rules as necessary to implement its procedures; and TEC, §21.041(b)(1), which requires the SBEC to propose rules that provide for the regulation of educators and the general administration of the TEC, Chapter 21, Subchapter B, in a manner consistent with the TEC, Chapter 21, Subchapter B; and Texas Government Code, §2001.021, which authorizes a state agency to prescribe by rule the form for a petition and the procedure for the submission, consideration, and disposition.

CROSS REFERENCE TO STATUTE. The amendment implements Texas Education Code (TEC), §21.035(b) and §21.041(a) and (b)(1), and Texas Government Code (TGC), §2001.021.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502472
Cristina De La Fuente-Valadez
Director, Rulemaking
State Board for Educator Certification
Effective date: August 3, 2025
Proposal publication date: March 14, 2025
For further information, please call: (512) 475-1497

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TITLE 22. EXAMINING BOARDS

PART 22. TEXAS STATE BOARD OF PUBLIC ACCOUNTANCY

CHAPTER 505. THE BOARD

22 TAC §505.1

The Texas State Board of Public Accountancy adopts an amendment to §505.1 concerning Board Seal and Headquarters, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3205) and will not be republished.

The staff recommended that much of Rule 505.1 be repealed. The Board seal is not required to be a rule and any revision to the seal should be an administrative function of the Board and not be required to go through a rulemaking process.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502334
J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Effective date: July 30, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 305-7842

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22 TAC §505.3

The Texas State Board of Public Accountancy adopts an amendment to §505.3 concerning Presiding Officer of the Board, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3206) and will not be republished.

The amendment clarifies that the Presiding Officer of the Board is responsible for official board business and then identifies in detail what constitutes official board business.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502335

J. Randel (Jerry) Hill
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Texas State Board of Public Accountancy
Effective date: July 30, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 305-7842

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CHAPTER 507. EMPLOYEES OF THE BOARD

22 TAC §507.2

The Texas State Board of Public Accountancy adopts an amendment to §507.2 concerning Staff, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3207) and will not be republished.

The amendment corrects the definition of nepotism to consist of the third degree of consanguinity and not the second degree.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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Proposal publication date: May 30, 2025
For further information, please call: (512) 305-7842

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22 TAC §507.3

The Texas State Board of Public Accountancy adopts an amendment to §507.3 concerning Independent Contractors, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3208) and will not be republished.

The amendment makes it clear that the board may contract with outside legal counsel with the approval of the Office of Attorney General.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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CHAPTER 509. RULEMAKING PROCEDURES

22 TAC §509.2

The Texas State Board of Public Accountancy adopts an amendment to §509.2 concerning Emergency Rulemaking, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3209) and will not be republished.

The amendment makes the public aware that the board, in an emergency, may adopt rules to address an emergency. In an emergency, the board is not required to seek public comment on the rule for 30 days prior to its adoption.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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CHAPTER 527. PEER REVIEW

22 TAC §527.1

The Texas State Board of Public Accountancy adopts an amendment to §527.1 concerning Establishment of Peer Review Program, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3210) and will not be republished.

The amendment makes it clear that the Peer Review Program is designed to address attest services.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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J. Randel (Jerry) Hill
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Texas State Board of Public Accountancy
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For further information, please call: (512) 305-7842

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22 TAC §527.2

The Texas State Board of Public Accountancy adopts an amendment to §527.2 concerning Definitions, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3211) and will not be republished.

The amendment is designed to better define the scope of an engagement review and be consistent with AICPA rules.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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J. Randel (Jerry) Hill
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For further information, please call: (512) 305-7842

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22 TAC §527.4

The Texas State Board of Public Accountancy adopts an amendment to §527.4 concerning Enrollment and Participation, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3213) and will not be republished.

The amendment makes it clear that failure to properly satisfy Peer Review requirements may subject the licensee to disciplinary action including sanctions. Other proposed revisions are helpful for purposes of clarification of the program requirements.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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J. Randel (Jerry) Hill
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For further information, please call: (512) 305-7842

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22 TAC §527.6

The Texas State Board of Public Accountancy adopts an amendment to §527.6 concerning Reporting to the Board, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3214) and will not be republished.

The amendment identifies important documents to be submitted to the board for the board's access in evaluating peer review.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502353
J. Randel (Jerry) Hill
General Counsel
Texas State Board of Public Accountancy
Effective date: July 30, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 305-7842

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22 TAC §527.7

The Texas State Board of Public Accountancy adopts an amendment to §527.7 concerning Peer Review Oversight Board, without changes to the proposed text as published in the May 30, 2025 issue of the *Texas Register* (50 TexReg 3215) and will not be republished.

The amendment removes the requirement that all PRRC meetings must be attended and reviewed by the Peer Review Oversight Board.

No comments were received regarding adoption of the amendment.

The amendment is adopted under the Public Accountancy Act (Act), Texas Occupations Code, §901.151 and §901.655 which provides the agency with the authority to amend, adopt and repeal rules deemed necessary or advisable to effectuate the Act.

No other article, statute or code is affected by the adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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TITLE 25. HEALTH SERVICES

PART 1. DEPARTMENT OF STATE HEALTH SERVICES

CHAPTER 3. ADVISORY COMMITTEES, COUNCILS, AND BOARDS

25 TAC §3.1

The executive commissioner of the Texas Health and Human Services Commission (HHSC), on behalf of the Department of State Health Services (DSHS), adopts new §3.1, concerning Texas School Health Advisory Committee.

Section 3.1 is adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3357). This rule will not be republished.

BACKGROUND AND JUSTIFICATION

The Texas School Health Advisory Committee (TSHAC) rule is repealed from 25 TAC Chapter 37 and relocated to 25 TAC Chapter 3. The reorganization improves public access to DSHS advisory committee, council, and board rules by moving all advisory committee, council, and board rules into a single chapter. The repeal is adopted in this issue of the *Texas Register*. The new rule is updated to align with the Health and Human Services advisory committee rule template and is substantially similar to the rule proposed for repeal. Additionally, the new rule aligns with statute and Executive Order No. GA-55, issued January 31, 2025.

COMMENTS

The 21-day comment period ended June 27, 2025.

During this period, DSHS did not receive any comments regarding the proposed rule.

STATUTORY AUTHORITY

The new rule is adopted under Texas Health and Safety Code §1001.0711, which provides that the executive commissioner will establish the School Health Advisory Committee at the department by rule; Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system; and Texas Health and Safety Code §1001.075, which authorizes the executive commissioner of HHSC to adopt rules necessary for the operation and provision of health and human services by DSHS and for the administration of Texas Health and Safety Code Chapter 1001.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502499
Cynthia Hernandez
General Counsel
Department of State Health Services
Effective date: August 3, 2025
Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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CHAPTER 31. NUTRITION SERVICES SUBCHAPTER B. FARMERS' MARKET NUTRITION PROGRAM

25 TAC §31.11, §31.12

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Subchapter B, consisting of §31.11, concerning Definitions; and §31.12, concerning Program Administration.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3360). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

The repeal of the rules in Subchapter B, Farmers' Market Nutrition Program, is necessary. The Farmers' Market Nutrition Program is no longer administered by HHSC as the program was transferred to the Texas Department of Agriculture.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502446
Karen Ray
Chief Counsel
Department of State Health Services
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For further information, please call: (512) 221-9021

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CHAPTER 37. MATERNAL AND INFANT HEALTH SERVICES
SUBCHAPTER R. ADVISORY COMMITTEES

25 TAC §37.350

The executive commissioner of the Texas Health and Human Services Commission (HHSC), on behalf of the Department of State Health Services (DSHS), adopts the repeal of §37.350, concerning Texas School Health Advisory Committee.

The repeal of §37.350 is adopted with no changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3361). The repeal will not be republished.

BACKGROUND AND JUSTIFICATION

The Texas School Health Advisory Committee rule is repealed from 25 TAC Chapter 37 and relocated to 25 TAC Chapter 3. This reorganization improves public access to DSHS advisory committee, council, and board rules by moving all advisory committee, council, and board rules into a single chapter. The new rule is adopted in this issue of the *Texas Register* and is substantially similar to the rule that is repealed. The new rule is updated to align with the Health and Human Services advisory committee rule template and with statute and Executive Order No. GA-55, issued January 31, 2025.

COMMENTS

The 21-day comment period ended June 27, 2025.

During this period, DSHS did not receive any comments regarding the proposed repeal.

STATUTORY AUTHORITY

The repeal is adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system and Texas Health and Safety Code §1001.075, which authorizes the executive commissioner of HHSC to adopt rules necessary for the operation and provision of health and human services by DSHS and for the administration of Texas Health and Safety Code Chapter 1001.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502500
Cynthia Hernandez
General Counsel
Department of State Health Services
Effective date: August 3, 2025
Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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CHAPTER 217. MILK AND DAIRY
SUBCHAPTER A. GRADE SPECIFICATIONS AND REQUIREMENTS FOR MILK

25 TAC §217.2

The executive commissioner of the Texas Health and Human Services Commission (HHSC), on behalf of the Department of State Health Services (DSHS), adopts an amendment to §217.2, concerning Adopted Regulations and Standards for milk.

Section 217.2 is adopted without changes to the proposed text as published in the May 16, 2025, issue of the *Texas Register* (50 TexReg 2889). This rule will not be republished.

BACKGROUND AND JUSTIFICATION

The amendment is necessary to comply with the current revision of the Pasteurized Milk Ordinance (PMO). This amendment is also necessary to comply with the current revision of three additional sets of federal standards and regulations which, like the PMO, are published as a joint effort between the United States Department of Health and Human Services (USDHHS), United States Food and Drug Administration (FDA), United States Public Health Service (USPHS), and National Conference of Interstate Milk Shipments (NCIMS).

The additional standards and regulations are entitled:

1) Procedures Governing the Cooperative State-Public Health Service/Food and Drug Administration Program of the National Conference on Interstate Milk Shipments (Procedures);

2) Methods for Making Sanitation Ratings of Milk Shippers and the Certifications/Listings of Single-Service Containers and/or Closures for Milk and/or Milk Product Manufacturers (Methods); and

3) Evaluation of Milk Laboratories (EML).

COMMENTS

The 31-day comment period ended June 16, 2025.

During this period, DSHS did not receive any comments regarding the proposed rule.

STATUTORY AUTHORITY

The amendment is authorized by Health and Safety Code §435.003, which authorizes the executive commissioner to adopt rules providing specifications for the production and handling of milk and milk products; Texas Government Code §524.0151 and Texas Health and Safety Code §1001.075, which authorize the executive commissioner of HHSC to adopt rules for the operation and provision of health and human services by DSHS and for the administration of Texas Health and Safety Code Chapter 1001.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cynthia Hernandez
General Counsel
Department of State Health Services
Effective date: August 3, 2025
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For further information, please call: (512) 289-1704

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CHAPTER 417. AGENCY AND FACILITY RESPONSIBILITIES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Subchapter A, consisting of §417.1, concerning Purpose; §417.2, concerning Application; §417.3, concerning Compliance with Nondiscrimination Laws; §417.6, concerning Assignment and Use of Pooled Vehicles; §417.7, concerning Inscription on State Vehicles; §417.9, concerning Material Safety Data Sheets; §417.14, concerning Non-Commercial Groups; §417.23, concerning Unauthorized Departures That May Have Unusual Consequences; §417.27, concerning Depositing Department Funds; §417.29, concerning Benefit Funds: Use and Control; §417.33, concerning Mail for Staff Residing On Campus; §417.34, concerning Commercial Solicitation on Grounds; and, in Subchapter K, §417.509, concerning Peer Review; §417.514, concerning TDMHMR Administrative Responsibilities; §417.516, concerning Exhibits; §417.517, concerning References; and §417.518, concerning Distribution.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3366).These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, certain functions previously performed by the Texas Department of State Health Services, including client services, certain regulatory functions, and the operation of state hospitals, transferred to the HHSC. The repeals are necessary to remove rules that are no longer necessary.

These rules are duplicative of agency rules located in Texas Administrative Code, Title 26, Chapters 910, 926 and 930 and agency policies.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. STANDARD OPERATING PROCEDURES

25 TAC §§417.1 - 417.3, 417.6, 417.7, 417.9, 417.14, 417.23, 417.27, 417.29, 417.33, 417.34

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of State Health Services
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For further information, please call: (512) 221-9021

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SUBCHAPTER K. ABUSE, NEGLECT, AND EXPLOITATION IN TDMHMR FACILITIES

25 TAC §§417.509, 417.514, 417.516 - 417.518

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
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For further information, please call: (512) 221-9021

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CHAPTER 448. STANDARD OF CARE
SUBCHAPTER A. DEFINITIONS

25 TAC §448.101

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 448, consisting of §448.101, concerning Definitions.

Section 448.101 is adopted without changes to the proposed text as published in the May 23, 2025, issue of the *Texas Register* (50 TexReg 3100). This rule will not be republished.

BACKGROUND AND JUSTIFICATION

The repeal is necessary to remove an obsolete rule. Section 448.101 was adopted in 2004 to adopt by reference definitions originally located in Title 40, Chapter 141 that have since been repealed.

COMMENTS

The 21-day comment period ended June 13, 2025. During this period, HHSC did not receive any comments regarding the proposed repeal.

STATUTORY AUTHORITY

The repeal is adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Cynthia Hernandez
General Counsel
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TITLE 26. HEALTH AND HUMAN SERVICES

PART 1. HEALTH AND HUMAN SERVICES COMMISSION

CHAPTER 745. LICENSING

SUBCHAPTER C. OPERATIONS THAT ARE EXEMPT FROM REGULATION

DIVISION 2. EXEMPTIONS FROM REGULATION

26 TAC §745.117

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts an amendment to §745.117, concerning Programs of Limited Duration Exempt from Regulation by Child Care Regulation (CCR).

Section 745.117 is adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3423). This rule will not be republished.

BACKGROUND AND JUSTIFICATION

The amendment is necessary to update the figure in §745.117 to restore two missing paragraphs in the table. The paragraphs were inadvertently removed through a recent rulemaking regarding Population Requirements for Certain Exempt Programs, which became effective on March 10, 2025. The missing two paragraphs relate to Child Care Regulation exemptions and do not impact current permit holders. For any new programs that apply for permits that would meet the exemptions, the criteria are in Texas Human Resources Code (HRC) §42.041(b)(4) and (22).

COMMENTS

The 14-day comment period ended June 20, 2025. During this period, HHSC did not receive any comments regarding the proposed rule.

STATUTORY AUTHORITY

The amendment is adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system, and Texas Government Code §524.0005, which provides the executive commissioner of HHSC with broad rulemaking authority. In addition, HRC §42.042(a) requires HHSC to adopt rules to carry out the requirements of Chapter 42 of HRC.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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TRD-202502497
Karen Ray
Chief Counsel
Health and Human Services Commission
Effective date: August 3, 2025
Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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TITLE 30. ENVIRONMENTAL QUALITY

PART 1. TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

CHAPTER 321. CONTROL OF CERTAIN ACTIVITIES BY RULE

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts the addition of new §§321.48, 321.49, 321.401, 321.403, 321.405, 321.407, 321.409, 321.411, and 321.413.

New §§321.49, 321.401, 321.403, 321.407, 321.409, 321.411, and 321.413 are adopted without changes to the proposed text as published in the February 28, 2025, issue of the *Texas Register* (50 TexReg 1632) and, therefore, will not be republished.

New §§321.48 and 321.405 are adopted with changes to the proposed text as published in the February 28, 2025, issue of the *Texas Register* (50 TexReg 1632) and, therefore, will be republished.

Background and Summary of the Factual Basis for the Adopted Rules

TCEQ is adopting amendments to 30 Texas Administrative Code (TAC) Chapter 321 (Control of Certain Activities by Rule), Subchapter B (Concentrated Animal Feeding Operations) and add new Subchapter Q (Land Application of Dairy Waste Authority) to implement House Bill (HB) 692, 88th Legislative Session, which added §26.0481 to Chapter 26, Subchapter B of the Texas Water Code (TWC) and §361.1215 to Chapter 361, Subchapter C of the Texas Health and Safety Code (THSC). The bill directs TCEQ to: 1) issue an authorization by rule for land application of dairy waste and to adopt rules governing that land application (THSC §361.1215); 2) adopt rules allowing the disposal of dairy waste from dairy operations either permitted as a concentrated animal feeding operation (CAFO) or unpermitted animal feeding operation (AFO) into a control or retention facility, including a lagoon or

playa (TWC §26.0481(b)(1)); and, 3) authorize land application by irrigation associated with that disposal (TWC §26.0481(b)(2)).

TCEQ is adopting new §321.48 and §321.49 to the CAFO rules in 30 TAC Chapter 321, Subchapter B, that allow dairy operations to land apply dairy waste directly to land application areas, or put dairy waste in a retention control structure (RCS), including a lagoon or playa, and subsequently irrigate land application areas with dairy waste from the RCS. These activities are only allowed under emergency conditions.

TCEQ adopts the addition of new §§321.401, 321.403, 321.405, 321.407, 321.409, 321.411, and 321.413 under new 30 TAC Chapter 321, Subchapter Q, that allow entities, including landowners and any person along the dairy supply chain (milk haulers, milk processing plant, and milk bottling facilities), to directly land apply dairy waste, under emergency conditions, on agricultural land that is not associated with an animal feeding operation or any other TCEQ authorization.

As part of this rulemaking, the commission is also adopting amendments of 30 TAC Chapter 335 (Industrial Solid Waste and Municipal Hazardous Waste) concurrently in this issue of the *Texas Register*.

Section by Section Discussion

Information from the State Technical Standards of the Natural Resource Conservation Service (NRCS) for Nutrient Management Code 590 are included for guidance. The requirements of the new CAFO Rules mandate dairy operators to update the site-specific nutrient management plan (NMP) if commencing land application of dairy waste and to irrigate land application areas based on the application rates that are determined in accordance with the narrative rate approach from both Title 40 Code of Federal Regulations (CFR) §122.42(e)(5)(ii), and the rules found at 30 TAC §321.36(c) or §321.47(f)(3) of this title. This approach allows changes to the NMP to occur at the facility at any time, and adjustments can be made in the implementation of the plan.

The adopted rules include water quality-based limitations to control all pollutants that could be discharged at a level that will cause, or have the reasonable potential to cause, or contribute to an excursion above any state water quality standard. This includes water quality-based effluent limitations for the production area and land application area of dairy operations. All recordkeeping and annual reporting requirements are under new §321.48 and §321.49.

New §321.48, *Land Application of Dairy Waste*, establishes rules to provide authorization to a dairy operation to directly land apply dairy waste, and transfer and receive third-party (i.e., off-site) dairy waste to apply to land that is under the control of a permitted or an unpermitted AFO.

New §321.48(a), *Definitions*, establishes definitions for dairy operation, dairy waste, and emergency conditions. The definition of dairy waste maintains the statutory definition with additional language added to clarify the regulatory focus on liquid dairy waste and exclusion of solid and semi-solid forms of dairy waste. The definition of "emergency conditions" is consistent with the statutory definition in Texas Government Code §551.045(b)(2), with the addition of ice storm, mechanical failure, and any other situation deemed by the executive director to qualify as an emergency.

New §321.48(b), *Duration of Authorization*, limits the duration of the authorization for land application of dairy waste from the first day of the emergency condition(s) to seven (7) calendar days after the emergency condition has ended. Seven calendar days allows sufficient time to manage dairy waste after the emergency condition ends, however in the event that additional time is needed, the executive director can extend the duration of the authorization.

New §321.48(c), *Purpose*, establishes that new section §321.48 provides authorization to a dairy operation to land apply dairy waste, including dairy waste received from a third party, under emergency conditions to land that is under the control of a dairy CAFO or unpermitted AFO.

New §321.48(d), *Applicability*, establishes a requirement for the owner or operator of a dairy operation that generates dairy waste and the owner or operator of the dairy operation that accepts dairy waste to comply with all the requirements of new section §321.48.

New §321.48(e), *General Requirements*, establishes the requirements for land application of dairy waste by CAFOs and AFOs. The Section references §321.40 of this title (relating to Concentrated Animal Feeding Operation (CAFO) Land Application Requirements) and the AFO requirements in §§321.47(f) relating to land application, (h) nutrient utilization plans, and (i) record keeping requirements. The adopted rule requires that dairy waste be evenly applied to fields that are vegetated with actively growing crops, or incorporated into the soils if applied to a fallow field. To protect surface and groundwater, the adopted rule would limit the maximum application rate to 2,000 gallons per acre per year, require setbacks for wells and surface waters, and prohibit land application in the 100-year floodplain. To reduce the occurrence of nuisance odors, land application of dairy waste is prohibited within 750 feet from an occupied residence or business structure, school (including associated recreational areas), permanent structure containing a place of worship, or public park. Lastly, to prevent over-application of nutrients, land application of dairy waste is prohibited on land application areas that have elevated nutrient levels or land management units (LMUs) with a nutrient utilization plan.

New §321.48(f), *Notification Requirements*, establishes requirements for a dairy operator to notify the appropriate TCEQ Regional Office orally within 24 hours or by the next business day, and in writing on paper, electronic mail or other electronic method approved by the executive director within 14 days, of land applying dairy waste. The adopted new section establishes requirements for the written notification to contain the location of the disposal area; a description of the emergency condition; the date that dairy waste was applied; volume applied (gallons, or acre-feet); proof of authorization of the use of the field for dairy waste disposal if third-party (offsite) land was used; the duration of the emergency condition and if additional time will be needed; and a signed certification.

New §321.48(g), *Recordkeeping Requirements*, establishes requirements for a dairy owner or operator that land applies dairy waste to include certain information in the land application record in the onsite Pollution Prevention Plan (PPP). At a minimum, it must include a log of dairy waste land applied, weather conditions, documentation of any discharge of dairy waste, and a copy of notification(s) to the executive director.

New §321.48(h), *Discharge Notification*, establishes that requirements in §§321.44(a)(1) through (6) apply to the discharge of dairy waste.

New §321.48(i), *Discharge Monitoring*, establishes a requirement for the dairy operator to sample all discharges of dairy

waste to surface water in the state and comply with the discharge monitoring in §321.44(b).

New §321.48(j), *Annual Reporting*, establishes a requirement for a dairy operator land applying dairy waste to include the information required by 321.48(g) in the annual report required by 321.36(g) that is due to TCEQ on March 31, of each year. The adopted new subsection also establishes a requirement for dairy operators not authorized by permit to submit information regarding the total dairy waste (gallons, or acre-feet) generated and land applied by the same due date.

New §321.49, *Storage of Dairy Waste in a Retention Control Structure or Playa at an Animal Feeding Operation*, establishes rules to provide authorization to a dairy operation to store dairy waste in an RCS during emergency conditions.

New §321.49(a), *Purpose*, establishes that §321.49 provides authorization to a dairy operation to store dairy waste in an RCS or playa under emergency conditions and subsequently land apply the dairy waste.

New §321.49(b), *Applicability*, establishes that the provisions of §321.49 apply to an owner or operator of a dairy operation that stores dairy waste in an RCS, or playa that meets the special requirements for discharges of §321.41.

New §321.49(c), *Duration of Authorization*, limits the Authorization to put dairy waste in an RCS from the first day of the emergency condition(s) to seven (7) calendar days after the emergency condition ends. Seven calendar days allows sufficient time to manage dairy waste after the emergency condition ends, however in the event that additional time is needed, the executive director can extend the duration of the authorization.

New §321.49(d), *Discharge Restrictions*, establishes a prohibition on the discharge or disposal of dairy waste from a dairy operation into or adjacent to water in the state, except in accordance with new §321.49. The adopted section would establish a requirement for dairy waste generated by a dairy operation under this title to be retained and utilized in an appropriate and beneficial manner. The adopted section also establishes a requirement for disposal of dairy waste in an RCS to be subject to the effluent limitations in §321.37 and design requirements in §321.38 and §321.42(c).

New §321.49(e), *Recordkeeping Requirements*, establishes the requirements for keeping records of dairy waste placed in an RCS or playa. Records include a log of monthly dairy waste received and stored at the AFO or CAFO.

New §321.49(f), *General Requirements*, establishes the requirements for disposal of dairy waste in an RCS or playa. Specifically, the adopted rule prohibits dairy waste storage in certain playas for compliance with TWC §26.048. The adopted rule also requires a dairy operation using an RCS for storage of dairy waste ensure that storage of dairy waste doesn't cause an unauthorized discharge from the RCS. The adopted rule also requires oral and written notification to the TCEQ Regional Office when dairy waste is stored in an RCS.

New §321.49(g), *Dairy Waste Transfer*, establishes provisions to allow a dairy operation to transfer dairy waste to another dairy operation site for land application or storage in an RCS to use for irrigation when needed. The adopted rule requires the owner or operator generating the dairy waste to keep a record of all dairy waste (gallons, or acre-feet) transferred to another dairy operation, the date of transfer, as well as the name(s) and address(es) of the recipients of the dairy waste. Additionally, the adopted rule establishes a requirement for the owner or operator generating the dairy waste to provide the laboratory report for total nitrogen, total phosphorus, and total potassium content of the dairy waste to the receiver of the dairy waste. Book values for dairy waste nutrient contents may be used because under emergency conditions there may not be sufficient time to collect and analyze dairy waste and manage the dairy waste in a timely manner.

New §321.49(h), *Dairy Waste Received*, establishes requirements for a dairy operator that receives dairy waste to comply with the land application requirements in §321.48 or this section for storage of dairy waste in an RCS.

New §321.49(i), *Annual Reporting*, requires all information under §321.49(e) in the annual report required by §321.36(g) that is due to the TCEQ by March 31 of each year. The adopted new subsection also establishes a requirement for dairy operators not authorized by permit to submit information regarding the total dairy waste (gallons, or acre-feet) generated and land applied by the same due date.

The adopted rule creates new Chapter 321, Subchapter Q to authorize land application of dairy waste on agriculture land that is not part of an AFO or CAFO.

New Section §321.401, *Purpose and Applicability*, establishes that new Subchapter Q provides authorization by rule for direct land application of dairy waste, under emergency conditions, on agricultural land that is not associated with an animal feeding operation or any other TCEQ authorization and that the requirements of new Subchapter Q would apply to the entity or entities land applying the dairy waste and the owners of the land application area.

New §321.403, *Dairy Waste Management Alternatives*, lists options in addition to the adopted §321.48, §321.49 and Subchapter Q, that a person or entity may use to manage dairy waste during emergency conditions. The section includes options such as direct land application to lands authorized under a Texas Pollutant Discharge Elimination System (TPDES) permit or Texas Land Application permit (TLAP) amended to include dairy waste management, disposal at a permitted solid waste landfill, disposal via a permitted injection well, hauling or discharging to a permitted domestic wastewater collection system with written consent from the plant operator or owner, or use as animal feed.

New §321.405, *Definitions*, establishes definitions for agronomic rate, agricultural land, dairy operation, dairy waste, emergency conditions, land application, and water in the state. The definition of dairy waste maintains the statutory definition with additional language added to clarify the regulatory focus on liquid dairy waste and exclusion of solid and semi-solid forms of dairy waste. The definition of "emergency conditions" is consistent with the statutory definition in Texas Government Code §551.045(b)(2), with the addition of ice storm, mechanical failure, and any other situation deemed by the executive director to qualify as an emergency. The definition of "water in the state" is updated to reflect the change in name of the "Gulf of Mexico" to the "Gulf of America."

New §321.407, *Protection of Surface Water and Groundwater Quality*, establishes that new Subchapter Q does not authorize the discharge of dairy waste into water in the state, including surface water and groundwater, nor does it authorize any contamination of groundwater.

New §321.409, *General Requirements*, establishes requirements for land application of dairy waste under emergency conditions by owners and operators of agricultural operations that may receive dairy waste for beneficial use, and that the property owner consent would be required for all land application activities. The adopted rule requires that dairy waste be land applied to fields that are vegetated with actively growing crops, or incorporated into the soils if applied to a fallow field. To protect surface and groundwater, the adopted rule would limit the maximum application rate to 2,000 gallons per acre per year, require setbacks for wells and surface waters, prohibit land application in the 100-year floodplain, prohibit land application during rainfall events or to frozen or saturated ground, and prohibit land application to soils with shallow groundwater. To reduce the occurrence of nuisance odors, land application of dairy waste is prohibited within 750 feet from an occupied residence or business structure, school (including associated recreational areas), permanent structure containing a place of worship, or public park.

New §321.411, *Notification*, establishes requirements for the person or entity applying dairy waste or the owner of the land application areas to notify the appropriate TCEQ Regional Office upon land application of dairy waste. The adopted rule requires oral notification to occur within 24 hours of application and written notification within 14 days. The adopted rule includes information to assist landowners with identifying the regional office contact information. The adopted rule requires the notification to include the date, time, location, volume, and the applicable emergency condition.

New §321.413, *Duration of Authorization*, limits the authorization for land application of dairy waste under new Subchapter Q from the first day of the emergency condition(s) to a time period of seven (7) calendar days beyond the end of the emergency condition. Seven calendar days allows sufficient time to manage dairy waste after the emergency condition ends, however in the event that additional time is needed, the executive director can extend the duration of the authorization.

Final Regulatory Impact Determination

TCEQ reviewed the adopted rulemaking in consideration of the regulatory analysis of major environmental rules required by Texas Government Code (TGC) §2001.0225 and determined that the rulemaking is not subject to §2001.0225(a) because it does not meet the definition of a "Major environmental rule" as defined in §2001.0225(g)(3). The following is a summary of that review.

Section 2001.0225 applies to a "Major environmental rule" adopted by a state agency, the result of which is to exceed standards set by federal law, exceed express requirements of state law, exceed requirements of delegation agreements between the state and the federal government to implement a state and federal program, or adopt a rule solely under the general powers of the agency instead of under a specific state law. A "Major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector or the state.

The Texas Legislature enacted HB 692, amending TWC, Chapter 26 (Water Quality Control), Subchapter B (General Water Quality Power and Duties), and THSC, Chapter 361 (the Solid Waste Disposal Act), Subchapter C (Permits) by adding §26.0481 to the TWC and §361.1215 of the THSC, which provides an additional regulatory and legal method for dairy AFOs to dispose of dairy waste, which HB 692 defines as milk, milk by-products, or milk processing waste that is spilled, spoiled, adulterated, unmarketable, stranded, or otherwise unfit for human consumption produced by a dairy operation or at a CAFO, as applicable.

HB 692 required TCEQ to adopt new TCEQ rules to implement HB 692's provisions.

HB 692 grants TCEQ rulemaking authority to create an authorization by rule for land application of dairy waste, and to adopt new rules allowing the disposal of dairy waste from a CAFO into an RCS, including a lagoon or playa, and authorize land application by irrigation associated with that disposal.

As the Bill Analysis from the Environmental Regulation Committee of the Texas House of Representatives makes clear, the 88th Texas Legislature enacted HB 692 with the aim of providing Texas dairies with another disposal method for unused milk or dairy waste. In Texas, milk or dairy waste is disposed of in a disposal well, of which there are only two locations in Texas for dairy waste. According to the Texas Association of Dairymen, the average cost to dispose a truckload of milk, about 50,000 pounds, is around $3,000, which is a costly burden for dairy operators in Texas. Whereas, land application of dairy waste has proven to be an effective fertilizer, and based on current research, milk itself can improve soil health, if applied properly. This is due to milk's ability to provide nutrients to plants and stimulate the growth of beneficial fungi by supplying sugar. HB 692 addressed these issues by amending TWC and THSC to provide for the authorization for certain land applications and disposal of dairy waste.

HB 692 requires TCEQ to issue both an authorization by rule for land application of dairy waste, that minimizes the risk of water quality impairment caused by the land application, prescribes the conditions under which an authorization is issued, such as the duration of the authorization, the location of the land application area or unit, the maximum quantity or application rate of dairy waste that may be applied or disposed of under the authorization, the suggested agronomic application rate for the dairy waste, and best management practices (BMPs) for the handling and disposal of dairy waste.

HB 692 requires TCEQ, to the extent permitted by federal law, to adopt rules allowing the storage of dairy waste by an AFO into an RCS, including a lagoon or playa, and the land application by irrigation associated with that disposal. The rules must require BMPs and other conditions to ensure that the disposal of dairy waste into the RCS or its associated land application does not impair water quality.

In order to implement the provisions of HB 692, TCEQ adopts the addition of new §321.48 and §321.49 to the existing 30 TAC Chapter 321, Subchapter B rules allowing dairy operations to land apply dairy waste; and storage of dairy waste in an RCS, including a lagoon or playa, and irrigate dairy waste from the RCS to land application areas. TCEQ also adopts the addition of new §§321.401, 321.403, 321.405, 321.407, 321.409, 321.411, and 321.413 under new 30 TAC Chapter 321, Subchapter Q, allowing entities to directly land apply dairy waste, under emergency conditions, on agricultural land that is not associated with an animal feeding operation or any other TCEQ authorization.

Therefore, the specific intent of the adopted rulemaking is related to expanding the existing CAFO Rules with regulatory options for disposal of dairy waste, as defined in HB 692.

The adopted rules are intended to protect the environment or reduce risks to human health from environmental exposure. However, the adopted rulemaking will not adversely affect in a material way the economy, a sector of the economy, productivity, competition, or jobs; nor would the adopted rulemaking adversely affect in a material way the environment, or the public health and safety of the state or a sector of the state. Therefore, the adopted rulemaking does not fit the TGC, §2001.0225 definition of "Major environmental rule."

Even if this rulemaking was a "Major environmental rule," this rulemaking meets none of the criteria in §2001.0225 for the requirement to prepare a full Regulatory Impact Analysis. First, this rulemaking is not governed by federal law. Second, it does not exceed state law but rather extends state law and TCEQ rules to adopted and effective state laws. Third, does not come under a delegation agreement or contract with a federal program, and finally, is not being adopted under TCEQ's general rulemaking authority. This rulemaking is being adopted under a specific state statute enacted in HB 692 of the 2023 Texas legislative session and implements existing state law. Because this adoption does not constitute a major environmental rule, a regulatory impact analysis is not required.

Therefore, the commission does not adopt the rule solely under the commission's general powers. The commission invited public comment on the draft regulatory impact analysis determination. No comments were received on the draft regulatory impact analysis determination.

Takings Impact Assessment

TCEQ evaluated the adopted rulemaking and performed an analysis of whether it constitutes a taking under TGC, Chapter 2007. The following is a summary of that analysis.

Under TGC, §2007.002(5), "taking" means a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or Section 17 or 19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action and is the producing cause of a reduction of at least 25% in the market value of the affected private real property, determined by comparing the market value of the property as if governmental action is not in effect and the market value of the property determined as if the governmental action is in effect.

The specific purpose of the adopted rulemaking is to implement the legislative amendments to the THSC and the TWC in HB 692 by amending TCEQ's CAFO Rules to expand the existing CAFO Rules with regulatory options for disposal of dairy waste, as defined in HB 692. The adopted rulemaking will substantially advance this stated purpose by adopting new rule language that provides for the authorization for certain land applications and disposal of dairy waste.

Promulgation and enforcement of the adopted rules will not be a statutory or constitutional taking of private real property because, as the commission's analysis indicates, TCG, Chapter 2007 does not apply to these adopted rules because these rules do not impact private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. Specifically, the adopted rulemaking does not apply to or affect any landowner's rights in any private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real property and reduce any property's value by 25 percent or more beyond that which would otherwise exist in the absence of the regulations. The primary purpose of the adopted rules is to implement HB 692 by providing for the authorization for certain land applications and disposal of dairy waste. The adopted rulemaking is reasonably taken to fulfill requirements of state law. Therefore, the adopted rulemaking would not cause a taking under TGC, Chapter 2007.

Consistency with the Coastal Management Program

The commission reviewed the adopted rulemaking and found that the adoption is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 et seq., and therefore must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the adopted rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §29.22 and found the adopted rulemaking is consistent with the applicable CMP goals and policies.

CMP goals applicable to the adopted rulemaking includes protecting, preserving, restoring, and enhancing the diversity, quality, quantity, functions, and values of coastal natural resource areas (CNRAs); and ensuring sound management of all coastal resources by allowing for compatible economic development and multiple human uses of the coastal zone. CMP policies applicable to the adopted rules include that discharges must comply with water quality-based effluent limits; and that discharges which increase pollutant loadings to coastal waters must not impair designated uses of coastal waters and must not significantly degrade coastal water quality, unless necessary for important economic or social development.

The adopted rulemaking is consistent with the above goals and policies by requiring dairy waste disposal activities to be conducted in a manner that is protective of water quality and prohibits the discharge of dairy waste into water in the state.

Promulgation and enforcement of the rules would not violate or exceed any standards identified in the applicable CMP goals and policies because the adopted rules would be consistent with these CMP goals and policies, and the rule would not create or have a direct or significant adverse effect on any CNRAs.

The commission invited public comment on the consistency with the CMP during the public comment period. No comments were received regarding the CMP.

Public comment

At the February 13, 2025 Agenda, the commission directed the executive director to specifically invite public comment on the proposal to authorize the dairy waste management activities only under emergency conditions, without THSC, §361.1215 and TWC, §26.0481 expressly stating that they apply only in such situations. The proposed rule package was revised accordingly prior to publication in the *Texas Register*.

The commission offered a public hearing on March 31, 2025. The 30-day comment period closed on March 31, 2025. No public comments were received by the commission.

SUBCHAPTER B. CONCENTRATED ANIMAL FEEDING OPERATIONS

30 TAC §321.48, §321.49

Statutory Authority

The new sections are adopted under the Texas Water Code (TWC) and the Texas Health and Safety Code (THSC). TWC, §5.013 establishes the general jurisdiction of the commission, while TWC, §5.102 provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103. TWC, §5.103 requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state. TWC, §5.120 requires the commission to administer the law so as to promote judicious use and maximum conservation and protection of the environment and the natural resources of the state. TWC, §26.121, prohibits the unlawful discharge of pollutants into or adjacent to water in the state except as authorized by a rule, permit, or order issued by the commission. TWC, §26.0481 provides the commission with authority to adopt rules to allow the disposal of dairy waste from a CAFO into a control or retention facility, including a lagoon or playa; and the land application by irrigation associated with that disposal.

THSC, §361.1215 provides the commission with authority to issue an authorization by rule for land application of dairy waste and to adopt rules governing that land application.

The adopted new sections implement House Bill 692, 88th Texas Legislature (2023), TWC, §§5.013, 5.102, 5.103, 5.120, 26.121, 26.0481, and THSC, §361.1215.

§321.48. Land Application of Dairy Waste.

(a) Definitions. The following words and terms, when used in this subchapter, shall have the following meanings, unless the context clearly indicates otherwise:

(1) Dairy Operation--An Animal Feeding Operation (AFO) confining cattle that have been or may be used for production of milk, or otherwise associated with a dairy, including cows, calves, and bulls.

(2) Dairy Waste--Milk, milk by-products, or milk processing waste that is spilled, spoiled, adulterated, unmarketable, stranded, or otherwise unfit for human consumption produced by a dairy operation. For the purposes of this rule, dairy waste does not include solid or semi-solid milk products.

(3) Emergency Conditions--Instances where dairy waste is generated at any point along the dairy supply chain due to a reasonably unforeseeable situation, including but not limited to:

(A) fire, flood, earthquake, hurricane, tornado, or wind, rain, ice, or snowstorm;

(B) power failure, transportation failure, mechanical failure, or interruption of communication facilities;

(C) epidemic;

(D) riot, civil disturbance, enemy attack, or other actual or threatened act of lawlessness or violence; or

(E) any other situation deemed by the executive director to qualify as an emergency.

(b) Duration of Authorization. Authorization to land apply dairy waste on LMUs expires seven (7) calendar days after the emergency condition ends, unless an alternative duration for the authorization is granted by the executive director.

(c) Purpose. This section provides authorization to a dairy operation to directly land apply dairy waste, including dairy waste received from a third-party, under emergency conditions to land that is under the control of a permitted CAFO or unpermitted AFO.

(d) Applicability. This section applies to the owner or operator of a dairy operation that generates or accepts third-party dairy waste that is land applied under emergency conditions.

(e) General Requirements. The following requirements apply to land application of dairy waste:

(1) Land application of dairy waste must comply with the requirements of §321.40 of this title (relating to Concentrated Animal Feeding Operation (CAFO) Land Application Requirements) for a CAFO or §§321.47(f), (h), and (i) of this title (relating to Land Application, Nutrient Utilization Plans, and Recordkeeping Requirements, respectively) for an AFO.

(2) Discharge of dairy waste into water in the state from a land management unit (LMU) is prohibited.

(3) Land application practices shall be maintained to minimize ponding or puddling of the dairy waste on the site and prevent the occurrence of nuisance conditions.

(4) Land application of dairy waste shall not occur when the ground is frozen or saturated or during rainfall events.

(5) Dairy waste shall not be land applied within the well buffers identified in §321.38(b) of this title (relating to Control Facility Design Requirements Applicable to Concentrated Animal Feeding Operations (CAFOs)).

(6) Land application of dairy waste shall not occur within 100 feet of any surface water in the state.

(7) Land application of dairy waste shall not occur within a vegetative buffer strip required by §321.40(h) of this title.

(8) Dairy waste shall not be land applied within the 100-year floodplain.

(9) Dairy waste shall not be land applied to soils with shallow, perched or seasonal water tables.

(10) Dairy waste may only be applied to fields that are vegetated with actively growing crops, hay or vegetation, or if to a fallow field, the dairy waste shall be incorporated into the soils within 48 hours of land application.

(11) Dairy waste application shall be limited to a maximum of 2,000 gallons per acre per year.

(12) Dairy waste shall be applied evenly to the soils.

(13) Dairy waste shall not be land applied within 750 feet from an occupied residence or business structure, school (including associated recreational areas), permanent structure containing a place of worship, or public park.

(14) There shall be no land application of dairy waste to an LMU if the LMU is required to have a Nutrient Utilization Plan (NUP) per §321.40(k)(3) of this title.

(15) There shall be no land application of dairy waste to an LMU that has or reaches a critical soil test phosphorus (P) level of

greater than or equal to 500 ppm, with a P- Index rating of "High" or "Very High".

(f) Notification Requirements. The dairy operator shall notify the appropriate TCEQ Regional Office orally within 24 hours of land application of dairy waste or by the next business day, and in writing within 14 days of the land application of the dairy waste. Written notification may be on paper, electronic mail, or other electronic method as prescribed by the executive director. The notification shall include the following information:

(1) the location of the land where the dairy waste was land applied, including the address of the area, latitude and longitude, or a site map;

(2) the applicable emergency condition;

(3) the date that dairy waste was land applied;

(4) the volume (gallons, or acre-feet) of dairy waste land applied;

(5) proof of authorization of the use of the field for land application of dairy waste if third-party land was used;

(6) the duration of the emergency condition and if additional time will be needed to complete the land application; and

(7) a certification signed by the dairy operator that the requirements of this subchapter were complied with during the land application of dairy waste.

(g) Recordkeeping Requirements. A dairy owner or operator that land applies dairy waste shall include the following information in the Pollution Prevention Plan (PPP) required in §321.46(d) of this title:

(1) a log of all dairy waste land applied at the AFO or CAFO updated at least monthly. Such records must include the following information:

(A) date of dairy waste application to each LMU;

(B) location of the specific LMU and the volume (gallon, or acre-feet) applied during each application event;

(C) acreage of each individual crop on which dairy waste is applied; and

(D) weather conditions (such as the temperature, precipitation, and cloud cover) during the land application and 24 hours before and after the land application;

(2) documentation describing any discharge of dairy waste into water in the state including the date, time, volume of overflow (gallons, or acre-feet), a copy of the notification(s) provided to the regional office, and sample analysis results associated with the discharge; and

(3) copies of all notifications to the executive director, including any made to a Texas Commission on Environmental Quality regional office, as required by this subchapter, a permit, or authorization.

(h) Discharge Notification. Discharge notification requirements in §§321.44(a)(1) through (6) of this title shall apply to the discharge of dairy waste.

(i) Discharge Monitoring. The dairy operator shall sample all discharges of dairy waste to surface water in the state and comply with the discharge monitoring in §321.44(b) of this title.

(j) Annual Reporting. The dairy operator land applying dairy waste shall include the information required by §321.48(g) in the annual report as indicated in §321.36(g) of this title. Dairy operators that are not authorized by permit, and therefore not required to submit an annual report, must mail the following information to the appropriate TCEQ Regional Office that is servicing the area where the dairy operation is located by March 31 of each year:

(1) estimated total volume of dairy waste (in gallons) generated during the reporting period; and

(2) total volume of dairy waste (gallons, or acre-feet) land applied during the reporting period.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

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Charmaine K. Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
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For further information, please call: (512) 239-6087

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SUBCHAPTER Q. LAND APPLICATION OF DAIRY WASTE AUTHORITY

30 TAC §§321.401, 321.403, 321.405, 321.407, 321.409, 321.411, 321.413

Statutory Authority

The new sections are adopted under the Texas Water Code (TWC) and the Texas Health and Safety Code (THSC). TWC, §5.013 establishes the general jurisdiction of the commission, while TWC, §5.102 provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103. TWC, §5.103 requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state. TWC, §5.120 requires the commission to administer the law so as to promote judicious use and maximum conservation and protection of the environment and the natural resources of the state. TWC, §26.121, prohibits the unlawful discharge of pollutants into or adjacent to water in the state except as authorized by a rule, permit, or order issued by the commission. TWC, §26.0481 provides the commission with authority to adopt rules to allow the disposal of dairy waste from a CAFO into a control or retention facility, including a lagoon or playa; and the land application by irrigation associated with that disposal.

THSC, §361.1215 provides the commission with authority to issue an authorization by rule for land application of dairy waste and to adopt rules governing that land application.

The adopted new sections implement House Bill 692, 88th Texas Legislature (2023), TWC, §§5.013, 5.102, 5.103, 5.120, 26.121, 26.0481, and THSC, §361.1215.

§321.405. Definitions.

The following words and terms, when used in this subchapter, have the following meanings.

(1) Agronomic rate--The dairy waste application rate designed:

(A) to provide the amount of nitrogen needed by the crop or vegetation grown on the land; and

(B) to minimize the amount of nitrogen in the dairy waste that passes below the root zone of the crop or vegetation grown on the land.

(2) Agricultural land--Cropland, grassland, rangeland, pasture, or other specific land areas that are solely devoted to being used for growing crops, hay, or forage.

(3) Dairy Operation--Any entity involved in milk production, collection, transportation, receiving, transfer, or processing.

(4) Dairy Waste--Milk, milk by-products, or milk processing waste that is spilled, spoiled, adulterated, unmarketable, stranded, or otherwise unfit for human consumption produced by a dairy operation. For the purposes of this rule, dairy waste does not include solid or semi-solid milk products.

(5) Emergency Conditions--Instances where dairy waste is generated at any point along the dairy supply chain due to a reasonably unforeseeable situation, including but not limited to:

(A) fire, flood, earthquake, hurricane, tornado, or wind, rain, ice, or snowstorm;

(B) power failure, transportation failure, mechanical failure, or interruption of communication facilities;

(C) epidemic;

(D) riot, civil disturbance, enemy attack, or other actual or threatened act of lawlessness or violence; or

(E) any other situation deemed by the executive director to qualify as an emergency.

(6) Land application--The act of applying dairy waste to agricultural land for beneficial use by crops, hay, or forage. Beneficial use includes the addition of nutrients from dairy waste, such as nitrogen and phosphorous, and the water content of dairy waste used to enhance moisture content of the soil.

(7) Water in the state--Groundwater, percolating or otherwise, lakes, bays, ponds, impounding reservoirs, springs, rivers, streams, creeks, estuaries, wetlands, marshes, inlets, canals, the Gulf of America, inside the territorial limits of the state, and all other bodies of surface water, natural or artificial, inland or coastal, fresh or salt, navigable or nonnavigable, and including the beds and banks of all watercourses and bodies of surface water, that are wholly or partially inside or bordering the state or inside the jurisdiction of the state.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Charmaine K. Backens
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Texas Commission on Environmental Quality
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CHAPTER 335. INDUSTRIAL SOLID WASTE AND MUNICIPAL HAZARDOUS WASTE

SUBCHAPTER A. INDUSTRIAL SOLID WASTE AND MUNICIPAL HAZARDOUS WASTE IN GENERAL

30 TAC §335.2, §335.6

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) adopts the amendment to §335.2 and §335.6.

Amended §335.2 and §335.6 are adopted without changes to the proposed text as published in the February 28, 2025, issue of the *Texas Register* (50 TexReg 1642) and, therefore, will not be republished.

Background and Summary of the Factual Basis for the Adopted Rules

TCEQ is adopting amendments to 30 Texas Administrative Code (TAC) Chapter 335 (Industrial Solid Waste and Municipal Hazardous Waste) to implement House Bill (HB) 692, 88th Texas Legislature, which added §26.0481 to Chapter 26, Subchapter B of the Texas Water Code (TWC) and §361.1215 to Chapter 361, Subchapter C of the Texas Health and Safety Code (THSC). The bill directs TCEQ to: 1) issue an authorization by rule for land application of dairy waste and to adopt rules governing that land application (THSC §361.1215); 2) adopt rules allowing the disposal of dairy waste from dairy operations either permitted as a concentrated animal feeding operation (CAFO) or unpermitted animal feeding operation (AFO) into a retention control structure (RCS), including a lagoon or playa (TWC §26.0481(b)(1)); and, 3) authorize land application by irrigation associated with that disposal (TWC §26.0481(b)(2)). Adopted amendments in 30 Texas Administrative Code (TAC) Chapter 321 (Control of Certain Activities by Rule) prescribe the standards for land application of dairy waste under emergency conditions as further described in the preamble *Background and Summary of the Factual Basis for the Adopted Rules* for Chapter 321 amendments.

Dairy waste from CAFOs and AFOs is considered industrial waste in Texas, and land application or disposal of dairy waste would be subject to a permit under §335.2 or notification under §335.6. Amended §335.2 exempts land application or disposal of dairy waste under emergency conditions in compliance with Chapter 321 from the permitting requirements of Chapter 335. Amended §335.6 exempts land application activities conducted during emergency conditions and in compliance with Chapter 321 from Chapter 335 notification requirements. Although the land application or disposal of dairy waste in compliance with Chapter 321 would not be subject to permitting or notification requirements under Chapter 335, land used for disposing of solid waste, including dairy waste, would be a solid waste facility under THSC §361.003(36).

As part of this rulemaking, the commission is also adopting amendments to 30 TAC Chapter 321 (Control of Certain Activities by Rule) concurrently in this issue of the *Texas Register*.

Section by Section Discussion

Amended §335.2, *Permit Required*, adds paragraph (d)(10) to exempt from permitting under Chapter 335 the land application or disposal of dairy waste under emergency conditions in compliance with Chapter 321.

Amended §335.6, *Notification Requirements*, adds subsection (n) to exempt land application or disposal of dairy waste under

emergency conditions in compliance with Chapter 321 from the notification requirements of §335.6.

Final Regulatory Impact Determination

TCEQ reviewed the adopted rulemaking in consideration of the regulatory analysis of major environmental rules required by Texas Government Code (TGC) §2001.0225 and determined that the rulemaking is not subject to §2001.0225(a) because it does not meet the definition of a "Major environmental rule" as defined in §2001.0225(g)(3). The following is a summary of that review.

Section 2001.0225 applies to a "Major environmental rule" adopted by a state agency, the result of which is to exceed standards set by federal law, exceed express requirements of state law, exceed requirements of delegation agreements between the state and the federal government to implement a state and federal program, or adopt a rule solely under the general powers of the agency instead of under a specific state law. A "Major environmental rule" is a rule, the specific intent of which is to protect the environment or reduce risks to human health from environmental exposure and that may adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, or the public health and safety of the state or a sector or the state.

The 88th Texas Legislature enacted HB 692, amending TWC, Chapter 26 (Water Quality Control), Subchapter B (General Water Quality Power and Duties), and THSC, Chapter 361 (the Solid Waste Disposal Act), Subchapter C (Permits) by adding §26.0481 to the TWC and §361.1215 of the THSC, which provides an additional regulatory and legal method for dairy AFOs to dispose of dairy waste, which HB 692 defines as milk, milk by-products, or milk processing waste that is spilled, spoiled, adulterated, unmarketable, stranded, or otherwise unfit for human consumption produced by a dairy operation or at a CAFO, as applicable.

HB 692 required TCEQ to adopt new rules to implement HB 692's provisions.

HB 692 grants TCEQ rulemaking authority to create an authorization by rule for land application of dairy waste, and to adopt new rules allowing the disposal of dairy waste from a CAFO into an RCS, including a lagoon or playa, and authorize land application by irrigation associated with that disposal. The TCEQ has adopted revisions to 30 TAC Chapter 321 to implement the new requirements for land application or disposal of dairy waste.

The adopted amendments in Chapter 335 implement HB 692 by subjecting the requirements for land application or disposal of dairy waste to the requirements of Chapter 321 and not the permitting or notification requirements of Chapter 335. Dairy waste is considered industrial waste in Texas, and land application or disposal of dairy waste would be subject to a permit under §335.2 or notification under §335.6. The adopted amendment of §335.2 would exempt land application or disposal of dairy waste under emergency conditions in compliance with Chapter 321 from the permitting requirements of Chapter 335. The adopted amendment of §335.6 would exempt land application activities conducted during emergency conditions and in compliance with Chapter 321 from Chapter 335 notification requirements. Although the land application or disposal of dairy waste in compliance with Chapter 321 would not be subject to permitting or notification requirements under Chapter 335, land used for disposing of solid waste, including dairy waste, would be a solid waste facility under THSC §361.003(36).

Therefore, the specific intent of the adopted rulemaking is related to expanding the regulatory options for land application or disposal of dairy waste, as defined in HB 692.

The adopted rules are intended to protect the environment or reduce risks to human health from environmental exposure. However, the adopted rulemaking will not adversely affect in a material way the economy, a sector of the economy, productivity, competition, or jobs; nor would the adopted rulemaking adversely affect in a material way the environment, or the public health and safety of the state or a sector of the state. Therefore, the adopted rulemaking does not fit the TGC, §2001.0225 definition of "Major environmental rule."

Even if this rulemaking was a "Major environmental rule," this rulemaking meets none of the criteria in §2001.0225 for the requirement to prepare a full Regulatory Impact Analysis. First, this rulemaking is not governed by federal law. Second, it does not exceed state law but rather extends state law and TCEQ rules to adopted and effective state laws. Third, does not come under a delegation agreement or contract with a federal program, and finally, is not being adopted under the TCEQ's general rulemaking authority. This rulemaking is being adopted under a specific state statute enacted in HB 692 of the 2023 Texas legislative session and implements existing state law. Because this adoption does not constitute a major environmental rule, a regulatory impact analysis is not required.

Therefore, the commission does not adopt the rule solely under the commission's general powers. The commission invited public comment on the draft regulatory impact analysis determination. No comments were received on the draft regulatory impact analysis determination.

Takings Impact Assessment

TCEQ evaluated the adopted rulemaking and performed an analysis of whether it constitutes a taking under TGC, Chapter 2007. The following is a summary of that analysis.

Under TGC, §2007.002(5), "taking" means a governmental action that affects private real property, in whole or in part or temporarily or permanently, in a manner that requires the governmental entity to compensate the private real property owner as provided by the Fifth and Fourteenth Amendments to the United States Constitution or Section 17 or 19, Article I, Texas Constitution; or a governmental action that affects an owner's private real property that is the subject of the governmental action, in whole or in part or temporarily or permanently, in a manner that restricts or limits the owner's right to the property that would otherwise exist in the absence of the governmental action and is the producing cause of a reduction of at least 25% in the market value of the affected private real property, determined by comparing the market value of the property as if governmental action is not in effect and the market value of the property determined as if the governmental action is in effect.

The specific purpose of the adopted rulemaking is to implement the legislative amendments to the THSC and the TWC in HB 692 by revising TCEQ's rules in Chapter 321 to establish requirements for land application or disposal of dairy waste. The adopted rulemaking will substantially advance this stated purpose by adopting new rule language in Chapter 335 that exempts from permitting or notification under Chapter 335 for certain land applications and disposal of dairy waste in compliance with Chapter 321.

Promulgation and enforcement of the adopted rules will not be a statutory or constitutional taking of private real property because, as the commission's analysis indicates, TGC, Chapter 2007 does not apply to these adopted rules because these rules do not impact private real property in a manner that would require compensation to private real property owners under the United States Constitution or the Texas Constitution. Specifically, the adopted rulemaking does not apply to or affect any landowner's rights in any private real property because it does not burden (constitutionally), restrict, or limit any landowner's right to real property and reduce any property's value by 25 percent or more beyond that which would otherwise exist in the absence of the regulations. The primary purpose of the adopted rules is to implement HB 692 by providing for the authorization for certain land applications and disposal of dairy waste. The adopted rulemaking is reasonably taken to fulfill requirements of state law. Therefore, the adopted rulemaking will not cause a taking TGC, Chapter 2007.

Consistency with the Coastal Management Program

The commission reviewed the adopted rulemaking and found that the proposal is subject to the Texas Coastal Management Program (CMP) in accordance with the Coastal Coordination Act, Texas Natural Resources Code, §§33.201 et seq., and therefore must be consistent with all applicable CMP goals and policies. The commission conducted a consistency determination for the adopted rules in accordance with Coastal Coordination Act Implementation Rules, 31 TAC §29.22 and found the adopted rulemaking is consistent with the applicable CMP goals and policies.

CMP goals applicable to the adopted rulemaking includes protecting, preserving, restoring, and enhancing the diversity, quality, quantity, functions, and values of coastal natural resource areas (CNRAs); and ensuring sound management of all coastal resources by allowing for compatible economic development and multiple human uses of the coastal zone. CMP policies applicable to the adopted rules include that discharges must comply with water quality-based effluent limits; and that discharges which increase pollutant loadings to coastal waters must not impair designated uses of coastal waters and must not significantly degrade coastal water quality, unless necessary for important economic or social development.

The adopted rulemaking is consistent with the above goals and policies by requiring dairy waste disposal activities to be conducted in a manner that is protective of water quality and prohibits the discharge of dairy waste into water in the state.

Promulgation and enforcement of the rules would not violate or exceed any standards identified in the applicable CMP goals and policies because the adopted rules would be consistent with these CMP goals and policies, and the rule would not create or have a direct or significant adverse effect on any CNRAs.

The commission invited public comment on the consistency with the CMP during the public comment period. No comments were received regarding the CMP.

Public comment

The commission offered a public hearing on March 31, 2025. The 30-day comment period closed on March 31, 2025. No public comments were received by the commission.

Statutory Authority

The amended sections are adopted under the Texas Water Code (TWC) and the Texas Health and Safety Code (THSC). TWC, §5.013 establishes the general jurisdiction of the commission, while TWC, §5.102 provides the commission with the authority to carry out its duties and general powers under its jurisdictional authority as provided by TWC, §5.103. TWC, §5.103 requires the commission to adopt any rule necessary to carry out its powers and duties under the TWC and other laws of the state. TWC, §5.120 requires the commission to administer the law so as to promote judicious use and maximum conservation and protection of the environment and the natural resources of the state. TWC, §26.121, prohibits the unlawful discharge of pollutants into or adjacent to water in the state except as authorized by a rule, permit, or order issued by the commission. TWC, §26.0481 provides the commission with authority to adopt rules to allow the disposal of dairy waste from a CAFO into a control or retention facility, including a lagoon or playa; and the land application by irrigation associated with that disposal.

The commission adopted these amendments under THSC, §361.011, which grants the commission authority over municipal solid waste; THSC, §361.017, which grants the commission jurisdiction over industrial solid waste and hazardous municipal waste; THSC, §361.024, which authorizes the commission to adopt rules consistent with the general purposes of the Solid Waste Disposal Act; and THSC, §361.078 which identifies that THSC Chapter 361, Subchapter B, does not abridge, modify, or restrict the commission's authority to adopt rules issue permits and enforce the terms of permits as necessary to maintain state authorization of Texas' hazardous waste program; and THSC, §361.119, which requires the commission to adopt rules and to adopt rules consistent with THSC, and THSC, §361.1215 provides the commission with authority to issue an authorization by rule for land application of dairy waste and to adopt rules governing that land application.

The adopted amended sections implement House Bill 692, 88th Texas Legislature (2023), TWC, §§5.013, 5.102, 5.103, 5.120, §26.121, §26.0481, and THSC, §361.1215.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 11, 2025.

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Texas Commission on Environmental Quality
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Proposal publication date: February 28, 2025
For further information, please call: (512) 239-6087

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TITLE 31. NATURAL RESOURCES AND CONSERVATION

PART 2. TEXAS PARKS AND WILDLIFE DEPARTMENT

CHAPTER 53. FINANCE

The Texas Parks and Wildlife Commission in a duly noticed meeting on March 27, 2025 adopted amendments to 31 TAC

§§53.1 - 53.4, 53.6, and §53.18, concerning License Issuance Procedures, Fees, Possession, and Exemption Rules- Provisions for Digital Products, and §53.60, concerning Stamps. The amendments to §53.2, 53.3, and §53.6 are adopted with changes to the proposed text as published in the February 21, 2025, issue of the *Texas Register* (50 TexReg 948). The amendments to §§53.1, 53.4, 53.18, and 53.60 are adopted without change and will not be republished.

The change to §53.2, concerning License Issuance Procedures, Fees, Possession, and Exemption Rules, removes a repeated phrase from subsection (c)(3). The change is nonsubstantive.

The change to §53.3, concerning Combination Hunting and Fishing License Packages, hyphenates the phrase "active duty" in subsection (a)(11). The change is nonsubstantive.

The change to §53.6, concerning Recreational Fishing Licenses, Stamps, and Tags, inserts a semicolon at the end of subsection (e)(2) and (4) to preserve structural parallelism and hyphenates the phrase "active duty" in subsections (a)(6) and (d)(3). The changes are nonsubstantive.

The amendments, in conjunction with other rules affecting 31 TAC Chapter 57, Subchapter N, concerning the Statewide Recreational and Commercial Fishing Proclamations, and Chapter 65, Subchapter A, concerning the Statewide Hunting Proclamation, published elsewhere in this issue of the *Texas Register*, expand the current provisions regarding the issuance and use of digital products to include and apply to all recreational hunting, fishing, and combination hunting and fishing licenses and stamp endorsements currently issued by the department directly to hunters and anglers, as well as the Annual Public Hunting Permit, Limited Use Permit, Harvest Information Program certification, Hunter Education Deferral Option, federal sandhill crane permit, and controlled exotic snake permit.

The 87th Texas Legislature (2021) enacted House Bill (H.B.) 3081, which authorized the commission to develop and implement a program for the issuance of digital tags for animals, including birds, to holders of hunting licenses authorizing the taking of those animals. The department accordingly initiated a pilot program in 2022 to determine the public receptivity to and logistical feasibility of the concept of digital licenses, stamp endorsements, and tags for hunting and fishing, which resulted in the creation of digital versions of the super-combination hunting and "all water" fishing license and the lifetime resident super-combination hunting and "all water" fishing package (47 TexReg 88). In 2022, after an analysis of customer purchasing behavior with respect to digital licenses and products, the department determined that it was appropriate to offer a digital version of the youth hunting license, the lifetime resident hunting license, and the lifetime fishing license for the license year beginning September 1, 2023, as well as the exempt angler red drum tag, which allows persons who are exempt from fishing license and stamp endorsement requirements to harvest red drum. The department is now confident, based on these pilot programs, that all recreational hunting and fishing licenses, stamp endorsements, tags, and selected permits that are sold directly to users can be made available to the public as digital products.

The amendment to §§53.1, concerning Applicability, adds definitions for "digital product," "electronic acquisition - electronically," "physical product," and "virtual documentation" in order to provide precise and unambiguous meanings for those terms as they are used in department rules.

The amendments to §§53.2, concerning License Issuance Procedures, Fees, Possession, and Exemption Rules, 53.3, concerning Combination Hunting and Fishing License Packages, 53.4, concerning Lifetime Licenses, and 53.6, concerning Recreational Fishing Licenses, Stamps, and Tags, make conforming changes necessary to comport with the provisions of §53.18, concerning License Issuance Procedures, Fees, Possession, and Exemption Rules- Provisions for Digital Products, which would be retitled "Digital Products," and become the controlling authority for all digital products offered by the department.

The amendment to §53.18, concerning License Issuing Procedures, Fees, Possession, and Exemption Rules-Provisions for Digital Products, retitles the section and makes the provisions of the section applicable to all recreational hunting and fishing licenses, stamp endorsements, and tags sold directly to the public, as well as the selected permits mentioned previously in this preamble. The effect of the amendment is to make digital versions of all recreational hunting and fishing licenses, stamp endorsements, tags, and select permits currently directly available to the public (in addition to the traditional versions of those products).

The amendment to §53.60, concerning Stamps, also makes conforming changes necessary to comport with the proposed §53.18.

The department received 126 comments opposing adoption of the provisions to implement digital versions of hunting licenses, stamp endorsements, tags, and selected permits. Of the 126 comments, 55 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

Thirty commenters opposed adoption and made statements indicating apparent misunderstanding of the proposal to mean the department was eliminating paper licenses, tags, and permits or somehow making digital products mandatory. The department disagrees with the comments and responds that hunters will still have the option of choosing between digital license products and traditional paper versions of those products. No changes were made as a result of the comments.

One commenter opposed adoption and stated, "regular hunting tag is plenty." The department neither agrees nor disagrees with the comment and responds that the rule as proposed did not provide additional tag opportunity, it simply made all tags available as digital products. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital licenses constitute an invasion of privacy. The department disagrees with the comment and responds that no person is required to purchase a digital product. No changes were made as a result of the comment.

One commenter opposed adoption and stated that hunting and the harvest of red drum and spotted seatrout should not be permitted because of potential harm to the resource. The department disagrees with the comment and responds that it is confident that the provision of digital license products will not result in harm to the resources regulated by the department. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital products are unfeasible because sometimes the department's website is down, making compliance impossible because regulations

cannot be accessed. The department disagrees with the comment and responds that it is incumbent upon all hunters and anglers to be familiar with and understand the regulations governing the activities they engage in, preferably before engaging in the activity, and that in any case there is a downloadable application containing all applicable information (with automatic updates) that exists for that purpose. No changes were made as a result of the comment.

One commenter opposed adoption and stated that lifetime licenses should be issued to veterans with a 100 percent permanent and total disability. The department disagrees with the comment and responds that although the commission is authorized to issue licenses at no cost to qualified disabled veterans on an annual basis, there is no statutory provision allowing the issuance of a lifetime license at no cost. No changes were made as a result of the comment.

Two commenters opposed adoption and stated that digital products should be eliminated because people are being cited for violations. The department disagrees with the comments and responds that just as the acquisition of paper licenses invokes the applicability of regulations governing their use and a concomitant responsibility on the part of the licensee to understand and comply with those rules, the choice to obtain a digital product comes with an obligation to understand and comply with regulations associated with the use of digital products, preferably before going into the field. The department understands that with new ways of doing things it is necessary to facilitate a smooth transition for the public, which the department acknowledges by implementing an "education period" during which enforcement personnel are directed to employ patience, understanding, and discretion based upon the unique circumstances involved; however, citations can be and are issued especially when a violation is determined to be intentional or reckless or occurs subsequent to a previous warning. No changes were made as a result of the comments.

One commenter opposed adoption and stated that "digital should be banned." The department disagrees with the comment and responds that if the commenter means that the department should not pursue digital licensing options, the department disagrees and responds that customer feedback indicates significant and overwhelming public support for providing hunters and anglers the option of obtaining digital products where feasible. No changes were made as a result of the comment.

Two commenters opposed adoption of the rules as proposed and made statements indicating a misunderstanding of the proposal to mean that there would no longer be a requirement for the documentation of lawful harvest of deer and turkey by hunters. The department disagrees with the comments and responds that rules remain in place to require documentation of lawful take, which must accompany the resource until tagging requirements legally cease. No changes were made as a result of the comments.

One commenter opposed adoption and stated that digital products would allow or encourage illegal hunting. The department disagrees with the comment and responds that rules are irrelevant to a person who makes the conscious decision to intentionally commit a criminal offense, and that department law enforcement personnel exist to detect and deter such activity. No changes were made as a result of the comment.

Four commenters opposed adoption and stated that digital products create the opportunity for invasion of privacy, specifying, variously, by hackers, the government, and foreigners. The department disagrees with the comments and responds that data security is an inherent risk with any device capable of accessing the internet over cellular or wifi networks, and as such it is therefore a personal decision whether or not to utilize the department's digital license products. No changes were made as a result of the comments.

One commenter opposed adoption and stated that "targeting through location detection is dishonest." The department disagrees that anyone using a digital license product is "targeted," whatever is meant by that term, and responds that a user of a digital license product is required to consent to the collection of location data as a condition of using the product. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital licensing should be unconstitutional because it gives game wardens a list of people to investigate while criminals pillage the resource. The commenter stated that the department should instead expand public hunting opportunity and improve the drawn hunt system. The department disagrees with the comment and responds that no aspect of the rules as adopted is violative of the federal or state constitutions. The department further responds that the sale and use of digital products does not result in the creation or maintenance of any sort of "list" of people for department law enforcement personnel to investigate, and that contrary to the commenter's statement, department law enforcement personnel are vigilant with respect to any and all violations of law regarding wildlife resources. Finally, the department responds that the rules as proposed and adopted have no connection to the department's land acquisition or public hunting programs. No changes were made as a result of the comment.

Six commenters opposed adoption and stated that there are many areas of the state without cell service. The department agrees with the comments and responds that the department's reporting application is not dependent upon network connectivity at the time a reporting requirement is executed; a hunter complies with reporting requirements by entering required data on a device, which records the date and time of the report. The information is then transmitted to the department when connectivity is established. No changes were made as a result of the comments.

One commenter opposed adoption and stated that digital license options should only be available to individuals with a disability that prevents them from obtaining a license in person because persons who obtain licenses available to active-duty military personnel are required to do so in person. The department disagrees with the comment and responds that because active-duty military licenses are free, the department must verify the military status of applicants in person in order to prevent unscrupulous persons from obtaining a license that person is not entitled to possess. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital licenses are "a step too far" because of perceived micromanagement of hunters and anglers, especially the special antler restrictions, which the commenter states are used by the department to increase revenue. The department disagrees with the comment and responds that the license and documentation requirements for harvested buck deer are identical for all hunters, whether take occurs under a digital product or paper license, and there are no revenue implications for the department. No changes were made as a result of the comment.

The department received 715 comments supporting adoption of the provisions to implement digital versions of hunting licenses, stamp endorsements, tags, and selected permits.

SUBCHAPTER A. FEES

DIVISION 1. LICENSE, PERMIT, AND BOAT AND MOTOR FEES

31 TAC §§53.1 - 53.4, 53.6, 53.18

The amendments are adopted under the authority of Parks and Wildlife Code, §42.010, which requires the department to prescribe the form and issuance of hunting licenses authorized under Parks and Wildlife Code, Chapter 42; §42.0101, which authorizes the commission to promulgate rules for the issuance of digital tags for animals, including birds, to holders of hunting licenses authorizing the taking of those animals, including rules allowing a person using a digital tag to create a digital record at the time of the taking of an animal that includes information required by the department as soon as possible after the taking of the animal and requiring a person using a digital tag to retain in the person's possession documentation of a required digital record at all times before the carcass is finally processed; §42.0177, which authorizes the commission to modify or eliminate the tagging, carcass, final destination, and final processing requirements of Chapter 42; §42.006, which authorizes the commission to prescribe requirements relating to possessing a license issued under Chapter 42 by rule; §46.0085, which authorizes the department to issue tags for finfish species allowed by law to be taken during each year or season from coastal waters of the state to holders of licenses authorizing the taking of finfish species; §46.0086, which authorizes the commission to prescribe tagging requirements for the take of finfish; §50.004, which requires the department to issue and prescribe the form and manner of issuance for combination hunting and fishing licenses, including identification and compliance requirements; §61.052, which requires the commission to regulate the periods of time when it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; and §61.054 which requires the commission to specify the means, methods, and places in which it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the species, quantity, age or size, and, to the extent possible, the sex of the game animals, game birds, or aquatic animal life authorized to be hunted, taken, or possessed; and the region, county, area, body of water, or portion of a county where game animals, game birds, or aquatic animal life may be hunted, taken, or possessed.

§53.2. License Issuance Procedures, Fees, Possession, and Exemption Rules.

(a) Hunting license.

(1) Except as provided in this section, no person may hunt in this state without having a valid physical hunting license in immediate possession.

(2) A person may hunt in this state without having a valid physical hunting license in immediate possession if that person has acquired a license electronically and has either:

(A) a receipt, notification, or application data from the department on a smart phone, computer, tablet, or similar device indicating acquisition of an appropriate digital product identified in §53.18 of this title (relating to Digital Products); or

(B) a valid confirmation number in possession while awaiting fulfilment of the physical license. Confirmation numbers shall only be valid for 20 days from date of purchase.

(3) Except as provided in this section, a person may hunt deer in this state without having a valid physical hunting license in immediate possession only if that person:

(A) has acquired a license electronically and has a valid confirmation number in possession while awaiting fulfilment of the physical license; and

(B) is lawfully hunting:

(i) under the provisions of §65.29 of this title (relating to Managed Lands Deer (MLD) Programs);

(ii) by special permit under the provisions of Chapter 65, Subchapter H of this title (relating to Public Lands Proclamation);

(iii) on department-leased lands under the provisions of Parks and Wildlife Code, §11.0271; or

(iv) by special antlerless permit issued by the U.S. Forest Service (USFS) for use on USFS lands that are part of the department's public hunting program.

(4) For the purposes of this chapter, any person under the age of 17 is a resident.

(b) Fishing license; Tags.

(1) A person may fish in this state without having a valid physical fishing license in immediate possession if that person:

(A) is exempt by rule or statute from holding a fishing license; or

(B) has acquired a license electronically and has either:

(i) a receipt, notification, or application data from the department on a smart phone, computer, tablet, or similar device indicating acquisition of a digital product identified in §53.18 of this title; or

(ii) a valid confirmation number in possession while awaiting fulfilment of the physical license. Confirmation numbers shall only be valid for 20 days from date of purchase.

(2) No person may catch and retain a red drum or spotted seatrout exceeding the maximum length limit established in Chapter 57, Subchapter N, Division 2, of this title (relating to Statewide Recreational Fishing Proclamation in the coastal waters of this state without having a valid physical fishing license, saltwater sportfishing stamp (unless exempt), and valid appropriate (red drum or spotted seatrout) tag in immediate possession, unless the person has purchased a valid digital product identified in §53.18 of this title.

(c) Issuance of licenses and stamp endorsements electronically (on-line or by telephone).

(1) A person may acquire recreational hunting and/or fishing licenses electronically from the department by agreeing to pay a convenience fee of up to $5 per license in addition to the normal license fee.

(2) A person may acquire recreational hunting and/or fishing stamp endorsements electronically from the department by agreeing to pay a convenience fee of up to $5 per stamp order in addition to the normal stamp endorsement fee(s). This fee shall not be charged if a license is acquired during the same transaction.

(3) The fees established by this subsection also apply to the electronic acquisition of a digital product identified in §53.18 of this title.

(d) The following categories of persons are exempt from fishing license requirements and fees:

(1) residents under 17 years of age;

(2) non-residents under 17 years of age;

(3) non-residents 65 years of age or older who are residents of Louisiana and who possess a Louisiana recreational fishing license;

(4) non-residents 65 years of age or older who are residents of Oklahoma;

(5) persons who hold valid Louisiana non-resident fishing licenses while fishing on all waters inland from a line across Sabine Pass between Texas Point and Louisiana Point that form a common boundary between Texas and Louisiana if the State of Louisiana allows a reciprocal privilege to persons who hold valid Texas annual or temporary non-resident fishing licenses; and

(6) residents of Louisiana who meet the licensing requirements of their state while fishing on all waters inland from a line across Sabine Pass between Texas Point and Louisiana Point that form a common boundary between Texas and Louisiana if the State of Louisiana allows a reciprocal privilege to Texas residents who hold valid Texas fishing licenses.

(e) A Louisiana resident who holds a valid Louisiana license equivalent to the Texas freshwater fishing guide license may engage in business as a fishing guide on all Texas waters north of the Interstate Highway 10 bridge across the Sabine River that form a common boundary between Texas and Louisiana, provided the State of Louisiana allows a reciprocal privilege to persons who hold a valid Texas resident freshwater fishing guide license. Except as may be specifically provided elsewhere in this chapter or Parks and Wildlife Code, no person may take or attempt to take fish in Texas public waters without first having obtained a Texas license valid for that purpose.

(f) An administrative fee of $3 shall be charged for replacement of lost or destroyed licenses, stamp endorsements, or permits. This fee shall not be charged for items which have a fee for duplicates otherwise prescribed by rule or statute.

(g) A license or permit issued under the Parks and Wildlife Code or this title that has been denied or revoked by the department may not be re-issued or reinstated unless the person applying for re-issuance or reinstatement applies to the department for re-issuance or reinstatement and pays to the department an application review fee of $100, in addition to any other fees or penalties required by law.

(h) A person who has purchased a valid physical hunting, fishing, or combination hunting and fishing license product but is not in physical possession of that physical license product in any circumstance for which physical possession of the license product is required may use a wireless communications device (laptop, cellphone, smart phone, electronic tablet, phablet, or similar device) to satisfy applicable license possession requirements.

(1) Upon request for proof of licensure by a department employee in the performance of official duties, a person may display one of the following images via a wireless communications device:

(A) an image of information from the Internet website of the department or mobile application verifying issuance of the license valid for the activity or circumstance for which proof of licensure has been requested; or

(B) a display image of a digital photograph of the applicable license issued to the person.

(2) The requirements of paragraph (1)(B) of this subsection are satisfied by separate digital images of the entirety of the front and back of the license. The images must be of a resolution, contrast, and image size sufficient to allow definitive verification of the information on the license.

(3) This subsection applies only to proof of licensure and does not relieve any person from any legal requirement or obligation to be in physical possession of a stamp, stamp endorsement, tag, or permit.

§53.3. Combination Hunting and Fishing License Packages.

(a) Combination hunting and fishing license packages may be priced at an amount less than the sum of the license and stamp prices of the individual licenses and stamps included in the package.

(1) Resident combination hunting and freshwater fishing package--$50. Package consists of a resident hunting license, a resident fishing license and a freshwater fish stamp;

(2) Resident combination hunting and saltwater fishing package--$55. Package consists of a resident hunting license, a resident fishing license, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(3) Resident combination hunting and "all water" fishing package--$60. Package consists of a resident hunting license, a resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(4) Resident senior combination hunting and freshwater fishing package--$16. Package consists of a senior resident hunting license, a senior resident fishing license and a freshwater fish stamp;

(5) Resident senior combination hunting and saltwater fishing package--$21. Package consists of a senior resident hunting license, a senior resident fishing license, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(6) Resident senior combination hunting and "all water" fishing package--$26. Package consists of a senior resident hunting license, a senior resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(7) Resident super combination hunting and "all water" fishing package--$68. Package consists of a resident hunting license, a migratory game bird stamp, an upland game bird stamp, an archery stamp, a resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(8) Resident senior super combination hunting and "all water" fishing package--$32. Package consists of a senior resident hunting license, a migratory game bird stamp, an upland game bird stamp, an archery stamp, a senior resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(9) Resident disabled veteran super combination hunting and "all water" fishing package--$0. Package consists of a resident hunting license, a migratory game bird stamp, an upland game bird stamp, an archery stamp, a resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag;

(10) Nonresident disabled veteran super combination hunting and "all water" fishing package--$0. Package consists of a resident hunting license, a migratory game bird stamp, an upland game bird stamp, an archery stamp, a resident fishing license, a freshwater fish

stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag. For purposes of this paragraph, a nonresident disabled veteran is a resident for the purpose of obtaining a super combination hunting and "all water" fishing package.

(11) Texas resident active-duty military super combination hunting and "all water" fishing package--$0. Package consists of a resident hunting license, an upland game bird stamp, a migratory game bird stamp, an archery stamp, a resident fishing license, a freshwater fish stamp, a saltwater sportfishing stamp, a spotted seatrout tag, and a red drum tag; and

(12) Replacement combination or replacement super combination packages--$10 except for a replacement disabled veteran super combination hunting and "all water" fishing package or a Texas resident active-duty military super combination hunting and "all water" fishing package, which shall be replaced at no charge.

(b) For purposes of this section, a "disabled veteran" is a veteran meeting the requirements of Parks and Wildlife Code, §42.012(c).

§53.6. Recreational Fishing Licenses, Stamps, and Tags.

(a) The items listed in this subsection are sold only as part of a package. The price and terms of these items are as follows:

(1) resident fishing license--$25;

(2) special resident fishing license (valid for residents who are legally blind as described in Parks and Wildlife Code, §46.004)--$7 (one red drum and one spotted seatrout tag shall be available at no additional charge with the purchase of a special resident fishing license);

(3) senior resident fishing license (valid for residents who are 65 years of age or older on the date of license purchase)--$7;

(4) "year-from-purchase" resident fishing license--$32. The "Year-from-purchase" resident fishing license is valid from the date of purchase through the end of the purchase month of the subsequent year;

(5) non-resident fishing license--$53; and

(6) Texas resident active-duty military "all water" fishing package--$0. Package consists of a resident fishing license, a freshwater fish stamp, and a saltwater sportfishing stamp with a red drum and a spotted seatrout tag.

(b) The items listed in this subsection may be sold individually or as part of a package. Stamps sold individually shall be valid from the date of purchase or the start date of the license year, whichever is later, through the last day of the license year. Stamps sold as part of a fishing package shall be valid for the same time period as the license included in the package as specified in this rule. The price of these stamps is as follows:

(1) freshwater fishing stamp--$5; and

(2) saltwater sportfishing stamp--$7 plus a saltwater sportfishing stamp surcharge of $3. A red drum tag and a spotted seatrout tag shall be issued at no additional charge with each saltwater sportfishing stamp.

(c) Fishing packages and licenses. The price of any fishing package shall be the sum of the price of the individual items included in the package:

(1) resident freshwater fishing package--$30. Package consists of a resident fishing license and a freshwater fish stamp;

(2) resident saltwater fishing package--$35. Package consists of a resident fishing license and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(3) resident "all water" fishing package--$40. Package consists of a resident fishing license, a freshwater fishing stamp, and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(4) senior resident freshwater fishing package--$12. Package consists of a senior resident fishing license and a freshwater fishing stamp;

(5) senior resident saltwater fishing package--$17. Package consists of a senior resident fishing license and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(6) senior resident "all water" fishing package--$22. Package consists of a senior resident fishing license, a freshwater fishing stamp, and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(7) "year-from-purchase" resident "all water" fishing package--$47. Package consists of a "year-from-purchase" resident fishing license, a freshwater fishing stamp, and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(8) resident one-day "all water" fishing license--$11. One red drum tag and one spotted seatrout tag shall be available at no additional charge with the purchase of the first one-day license only;

(9) non-resident freshwater fishing package--$58. Package consists of a non-resident fishing license and a freshwater fish stamp;

(10) non-resident saltwater fishing package--$63. Package consists of a non-resident fishing license and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(11) non-resident "all water" fishing package--$68. Package consists of a non-resident fishing license, a freshwater fishing stamp, and a saltwater sportfishing stamp with a red drum tag and a spotted seatrout tag;

(12) non-resident one-day "all water" fishing license--$16. One red drum tag and one spotted seatrout tag shall be available at no additional charge with the purchase of the first one-day license only; and

(13) Lake Texoma fishing license--$12. Holders of a valid Lake Texoma License are exempt from freshwater fishing stamp requirements solely for the purpose of fishing on Lake Texoma.

(d) Replacement licenses and packages.

(1) Except as otherwise provided in this subsection, the fee for replacement of a fishing package or license is $10.

(2) The fee for replacement of a special resident all-water fishing package is $6.

(3) The fee for replacement of a Texas resident active-duty military and "all water" fishing package replacement is $0.

(e) Fishing tags:

(1) exempt angler red drum tag (provides a red drum tag for persons that are exempt by statute or rule from the purchase of a resident or non-resident fishing license of any type or duration)--$3;

(2) bonus red drum tag (provides a second red drum tag to persons who have previously received a red drum tag)--$3;

(3) exempt angler spotted seatrout tag (provides a spotted seatrout tag for persons who are exempt by statute or rule from the purchase of a resident or non-resident fishing license of any type or duration)--$3;

(4) bonus spotted seatrout tag (provides a second spotted seatrout tag to persons who have previously received a spotted seatrout tag)--$3;

(5) individual bait-shrimp trawl tag--$37; and

(6) saltwater trotline tag--$5.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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James Murphy
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SUBCHAPTER B. STAMPS

31 TAC §53.60

The amendment is adopted under the authority of Parks and Wildlife Code, §42.010, which requires the department to prescribe the form and issuance of hunting licenses authorized under Parks and Wildlife Code, Chapter 42; §42.0101, which authorizes the commission to promulgate rules for the issuance of digital tags for animals, including birds, to holders of hunting licenses authorizing the taking of those animals, including rules allowing a person using a digital tag to create a digital record at the time of the taking of an animal that includes information required by the department as soon as possible after the taking of the animal and requiring a person using a digital tag to retain in the person's possession documentation of a required digital record at all times before the carcass is finally processed; §42.0177, which authorizes the commission to modify or eliminate the tagging, carcass, final destination, and final processing requirements of Chapter 42; §42.006, which authorizes the commission to prescribe requirements relating to possessing a license issued under Chapter 42 by rule; §46.0085, which authorizes the department to issue tags for finfish species allowed by law to be taken during each year or season from coastal waters of the state to holders of licenses authorizing the taking of finfish species; §46.0086, which authorizes the commission to prescribe tagging requirements for the take of finfish; §50.004, which requires the department to issue and prescribe the form and manner of issuance for combination hunting and fishing licenses, including identification and compliance requirements; §61.052, which requires the commission to regulate the periods of time when it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; and §61.054 which requires the commission to specify the means, methods, and places in which it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the species, quantity, age or size, and, to the extent possible, the sex of the game animals, game birds, or aquatic animal life authorized to be hunted, taken, or possessed; and the region, county, area, body of water, or portion of a county where game animals, game birds, or aquatic animal life may be hunted, taken, or possessed.

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CHAPTER 65. WILDLIFE

SUBCHAPTER A. STATEWIDE HUNTING PROCLAMATION

The Texas Parks and Wildlife Department in a duly noticed meeting on March 27, 2025, adopted amendments to 31 TAC §§65.7, 65.8, 65.10, 65.29, 65.42, 65.62, and 65.64, concerning the Statewide Hunting Proclamation. The amendment to §65.62, concerning Quail: Open Seasons, Bag and Possession Limits, is adopted with changes to the proposed text as published in the February 21, 2025, issue of the *Texas Register* (50 TexReg 959). The amendments to §§65.7, 65.8, 65.10, 65.29, 65.42, and 65.64 are adopted without changes and will not be republished.

The change to §65.62 alters the dates for quail season. The department proposed a quail season to run from the Saturday closest to October 28 until the last day of February. After deliberation, the commission adopted a season to run from November 1 to the last day of February. The department has determined that the change will prevent confusion and not result in depletion or waste of the resource.

The amendments to §65.7, concerning Application, §65.8, concerning Alternative Licensing System, and §65.10, concerning Possession of Wildlife Resources, make conforming changes to accommodate amendments to Chapter 53, concerning Finance, published elsewhere in this issue of the *Texas Register*, that provide for the issuance of digital versions of all recreational hunting licenses, stamp endorsements, tags, and selected permits that are currently available directly to the public as physical products. In 2021, the department launched a pilot program to determine the feasibility of implementing digital versions of physical licenses, stamp endorsements, tags, and permits. The results of the pilot program were favorable, and the department is therefore proceeding with respect to making all recreational license products currently available directly to the public available in a digital version.

The amendment to §65.29, concerning Managed Lands Deer Program (MLDP), allows the take of mule deer under the appropriate MLDP tag by any lawful means at any time during the period of validity of the tag (from the Saturday closest to September 30 through the last Sunday in January). Under current rule, lawful means of harvest is restricted to lawful archery equipment from the Saturday closest to September 30 for 35 consecutive days, which mirrors the current archery-only season dates established in the county regulations in §65.42, concerning Deer. Because the total harvest on MLDP properties is controlled by the department through the issuance of tags issued to landown-

ers, the department has determined there is no biological reason not to provide landowners and land managers enrolled in the MLDP the latitude to attain their harvest quota at their own discretion by any means lawful in the county of take (which has long been the case on MLDP properties with respect to the harvest of white-tailed deer).

The amendment to §65.42, concerning Deer, expands the archery-only season for mule deer from 35 days to 62 days in Brewster, Crane, Crockett, Culberson, Ector, El Paso, Hudspeth, Jeff Davis, Loving, Midland, Pecos, Presidio, Reagan, Reeves, Terrell, Upton, Val Verde, Ward, and Winkler counties. In addition, the amendment expands the archery-only season for mule deer from 35 to 56 days in those Panhandle counties that have an archery-only season for mule deer. The amendment is intended to provide additional hunting opportunity for archery enthusiasts and will not result in depletion or waste of the resource, as hunter success and wounding loss with respect to archery harvest of mule deer is generally quite low and the overall harvest regulations for antlerless mule deer are very conservative. The amendment would in essence prolong the current archery season in each affected county until opening day of the general season. The amendment also makes conforming changes to provisions governing digital products, for reasons discussed earlier in this preamble. Finally, the amendment to §65.42 eliminates subsection (c)(6) which is no longer necessary because the department has eliminated CWD management zones.

The amendment to §65.62, concerning Quail: Open Seasons, Bag and Possession Limits, alters the current season structure by opening the season on November 1 and closing the season on the last day of February. Under the existing regulatory structure, the season opens on the Saturday closest to October 28 and runs to the last Sunday in February, which creates variable opening dates each year, potentially creating confusion amongst hunters, landowners, and other interested parties. The change would result in a biologically negligible impact to the resource.

The amendment to §65.64, concerning Turkey, opens a fall (first Saturday in November through the first Sunday in January, either sex) and spring (Saturday closest to April 1 for 44 consecutive days, gobblers or bearded hens) season for turkeys in Lubbock County, with a four-bird annual bag limit. The department has determined that there is no biological reason not to allow the take of turkey in Lubbock County and that the open seasons as adopted will not result in depletion or waste. The amendment also makes conforming changes to provisions governing digital products, for reasons discussed earlier in this preamble, and clarifies the boundaries for turkey seasons in Hill County to eliminate potential confusion stemming from the fact that Interstate Highway 35 is divided into I-35 West and I-35 East. Finally, the amendment restores season dates that were not altered but inadvertently omitted in a previous notice of adoption.

The department received 126 comments opposing adoption of the provisions to implement digital versions of hunting licenses, stamp endorsements, tags, and selected permits. Of the 126 comments, 23 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

Thirteen commenters opposed adoption and made statements indicating apparent misunderstanding of the proposal to mean the department was eliminating paper licenses, tags, and permits. The department disagrees with the comments and responds that hunters will still have the option of choosing between digital license products and traditional paper versions of those products. No changes were made as a result of the comments.

One commenter opposed adoption and stated, "regular hunting tag is plenty." The department neither agrees nor disagrees with the comment and responds that the rule as proposed did not provide additional tag opportunity, it simply made all tags available as digital products. No changes were made as a result of the comment.

Two commenters opposed adoption of the rules as proposed and made statements indicating a misunderstanding of the proposal to mean that there would no longer be a requirement for the documentation of lawful harvest of deer and turkey by hunters. The department disagrees with the comments and responds that rules remain in place to require documentation of lawful take, which must accompany the resource until tagging requirements legally cease. No changes were made as a result of the comments.

One commenter opposed adoption and stated that digital products would allow or encourage illegal hunting. The department disagrees with the comment and responds that rules are irrelevant to a person who makes the conscious decision to intentionally commit a criminal offense, and that department law enforcement personnel exist to detect and deter such activity. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital products create the opportunity for invasion of privacy by foreigners. The department disagrees with the comment and responds that data security is an inherent risk with any device capable of accessing the internet over cellular or wifi networks, and as such it is therefore a personal decision whether or not to utilize the department's digital license products. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital products create the opportunity for invasion of privacy by government. The department disagrees with the comment and responds that data security is an inherent risk with any device capable of accessing the internet over cellular or wifi networks, and as such it is therefore a personal decision whether or not to utilize the department's digital license products. No changes were made as a result of the comment.

One commenter opposed adoption and stated that digital products create the opportunity for invasion of privacy by hackers. The department disagrees with the comment and responds that data security is an inherent risk with any device capable of accessing the internet over cellular or wifi networks, and as such it is therefore a personal decision whether or not to utilize the department's digital license products. No changes were made as a result of the comment.

One commenter opposed adoption and stated that "targeting through location detection is dishonest." The department disagrees that anyone using a digital license product is "targeted," whatever is meant by that term, and responds that a user of a digital license product is required to consent to the collection of location data as a condition of using the product. No changes were made as a result of the comment.

Two commenters opposed adoption and stated that there are many areas of the state without cell service. The department agrees with the comment and responds that the department's reporting applications are not dependent upon network connectivity at the time a reporting requirement is executed; a hunter

complies with reporting requirements by entering required data on a device, which records the date and time of the report and then automatically uploads that data when connectivity is established. No changes were made as a result of the comments.

The department received 228 comments supporting adoption of the provisions to implement digital versions of hunting licenses, stamp endorsements, tags, and selected permits.

The department received 90 comments opposing adoption of the proposed amendments to §65.29, concerning MLDP--Mule Deer. Of the 90 comments, 21 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

Six commenters opposed adoption and stated in some form or fashion that additional harvest of mule deer would be detrimental to mule deer populations. The department disagrees with the comments and responds that the rule as adopted cannot result in additional harvest because landowners who participate in the MLDP must agree in writing that the department will determine a biologically appropriate harvest for the property. No changes were made as a result of the comments.

Six commenters opposed adoption and stated that allowing the take of mule deer by firearm when take of mule deer on neighboring properties that do not participate in the MLDP is restricted to archery will result in an unfair advantage for the harvest of mature and trophy bucks. The department disagrees with the comments and responds that because the number and sex of deer harvested on any given MLDP property is fixed by the department, it does not matter, from a biological perspective, when the animals are taken, or by what means. The department further notes that because mule deer are free-ranging wildlife, there is no way to guarantee any hunter that a desirable animal will or will not be present in any given place at any given time. The department also notes that on properties that are not enrolled in the MLDP, the total harvest is limited only by the number of hunters on the property. No changes were made as a result of the comments.

One commenter opposed adoption and stated that the rule will allow MLDP cooperators to commercialize hunting opportunities for non-residents and that everyone should have to play by the same rules. The department disagrees with the comment and responds that landowners are free to provide hunting opportunity to anyone, irrespective of state of residence and that the rules in fact do apply to everyone equally. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the rule would result in stress to the population and interference with archery hunting on nearby properties. The department disagrees with the comment and responds that during the archery-only season for mule deer there are concurrent open seasons for other species during which firearms are lawful and that many people discharge firearms for purposes other than hunting, such as target shooting or plinking. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the rule is just a way to let affluent hunters purchase additional hunting opportunity. The department neither agrees nor disagrees with the comment and responds that financial arrangements between landowners and hunters are not regulated by the department. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that permits for antlerless deer and "cull" bucks should be made available to all landowners. The department agrees with the comments and responds that participation in the MLDP is open to any landowner or land manager and allows the department to work with the landowner or land manager to achieve customized management goals. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that mule deer populations are in decline. The department agrees that there are areas of the state where mule deer populations are not as vigorous or robust as they have historically been; however, harvest is not a factor in those declines and the department's harvest regulations are very conservative. No changes were made as a result of the comments.

One commenter opposed adoption and stated that MLDP properties should have the same seasons and antler restrictions as all other properties. The department disagrees with the comment and responds that the MLDP is a program designed to encourage responsible habitat management, and in exchange for performing certain qualifying management activities and accepting a department-imposed harvest regime, landowners and land managers are allowed more time and greater flexibility to achieve harvest goals established by the department. No changes were made as a result of the comment.

One commenter opposed adoption and stated that landowners should be allowed to hunt whenever they please, as is the case with white-tailed deer. The department disagrees with the comment and responds that the take of white-tailed deer is unlawful outside of the open seasons provided by law and the commenter is mistaken to believe or assert otherwise. No changes were made as a result of the comment.

The department received 545 comments supporting adoption of the amendment as proposed.

The department received 74 comments opposing adoption of the proposed amendments to §65.42, concerning Deer, that lengthened the archery-only season for mule deer in selected counties. Of those 74 comments, 21 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated that the mule deer season should be lengthened in order to provide hunting opportunity in cooler weather. The department disagrees with the comment and responds that the department is quite conservative with respect to mule deer harvest management and sets seasons based on breeding chronologies, habitat quality, and movement behavior so as to minimize negative population impacts. No changes were made as a result of the comment.

One commenter opposed adoption and stated that extending archery season will not benefit mule deer populations and that assertions of low hunter success rates with archery equipment are "pure assumption." The department disagrees with the comment and responds that the rule as adopted will neither harm nor benefit mule deer populations because of low hunting pressure and low hunter success that has been repeatedly verified by scientific investigation. No changes were made as a result of the comment.

Eight commenters opposed adoption and stated in some form or fashion that mule deer populations are in decline and cannot withstand the additional harvest pressure of a lengthened archery season. The department disagrees with the comments

and responds that although there are observed perturbations in mule deer populations in some areas, overharvest is neither responsible nor occurring and any additional harvest, if any, as a result of the rule as adopted will be so small as to be biologically negligible. No changes were made as a result of the comments.

One commenter opposed adoption and stated that "poaching by means of archery eliminates buck deer before the general season begins" and that archery-only season should be significantly truncated or eliminated entirely. The department disagrees with the comment and responds that the decision to poach is not based on whether a season is open or not, but on conscious disregard for the law in general. Additionally, harvest of mule deer by archery occurs at such low values that it is biologically negligible. No changes were made as a result of the comment.

One commenter opposed adoption and stated that lengthening the archery season for mule deer will result in more wounding loss and that affording greater opportunity to archery hunters than rifle hunters is biased. The department disagrees with the comment and responds that wounding loss is not dependent on days of available harvest opportunity but on the ethics, skill, and preparation of the hunter. The department believes that hunters who wound deer make the effort required by law to recover that animal and that the dissatisfaction of not achieving hunter success is a disincentive to repeating mistakes. No changes were made as a result of the comment.

Five commenters opposed adoption and stated displeasure with the department's "antler restriction" rules for mule deer. The department notes that the amendment as proposed concerns only the length of the archery-only open season and does not contemplate alteration of any other aspect of mule deer harvest regulations, such as bag, possession, or special provisions; thus, comments on "antler restrictions" are not germane to the proposal deliberated by the commission. The department notes that there is an annual opportunity each August for concerned persons to address the commission on any topic under commission jurisdiction, and that, additionally, staff are always available to discuss and explain harvest regulations with interested persons. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that instead of lengthening the current archery-only open season, it would be better to create a late season following the general season. The department disagrees with the comments and responds that late-season hunting opportunity following the close of the general season has the potential to result in excessive harvest of bucks and bred does. No changes were made as a result of the comments.

One commenter opposed adoption and stated that it is difficult to hunt mule deer with archery equipment on public lands during the general season for white-tailed deer. The department neither agrees nor disagrees with the comment and responds that the comment is not germane to the rule as proposed. No changes were made as a result of the comment.

One commenter opposed adoption and stated that archery equipment should be lawful during the entirety of the hunting season. The department agrees with the comment and responds that use of lawful archery equipment is legal during the general open season. No changes were made as a result of the comment.

The department received 609 comments supporting adoption of the amendment as proposed.

The department received 33 comments opposing adoption of the proposed amendment to §65.62, concerning quail season. Of those comments, 20 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated that a longer season would compound damage to quail populations caused by feral hogs. The department disagrees with the comment and responds that there is no apparent connection, biological or otherwise, between the length of the quail season and the activities of feral hogs. No changes were made as a result of the comment.

Six commenters opposed adoption and stated that quail populations "need more time to recover," or "need a break." The department disagrees with the comments and responds that although quail populations are experiencing long-term declines in some areas, this is due to factors other than hunting mortality and even the cessation of hunting altogether would not result in population increases significant enough to justify the loss of hunting opportunity. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that quail season is too long as it is. The department disagrees with the comments and responds that there is no biological evidence to suggest that the current season length or the season length adopted in this rulemaking have caused or will cause depletion or waste of the resource. The department notes that quail populations can fluctuate significantly as a result of rainfall patterns, habitat conditions and availability, changes in land use, and other factors. Such fluctuations are normal and the department's harvest regulations for quail take these factors into account. No changes were made as a result of the comments.

Four commenters opposed adoption and stated that quail populations are not large enough to justify a season extension. The department disagrees with the comments and responds, as noted earlier, that quail populations can fluctuate significantly as a result of rainfall patterns, habitat conditions and availability, changes in land use, and other factors. Such fluctuations are normal and the department's harvest regulations for quail take these factors into account. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that quail are in trouble and there should be a moratorium. The department disagrees with the comments and responds that there are factors beyond the control of the department that appear to be driving perturbations in quail population, but, as explained earlier, even a complete cessation of quail hunting would not affect the long-term sustainability of the resource. No changes were made as a result of the comments.

One commenter opposed adoption and stated that quail seasons should be set by region, not on a statewide basis. The department neither agrees nor disagrees with the comment and responds that regulation of quail hunting by region has been discussed and does offer the possibility of more nuanced management of quail populations in various ecotypes, but at the present time the department is satisfied that the current statewide quail season is sustainable. No changes were made as a result of the comment.

One commenter opposed adoption and stated that quail are under too much pressure. The department, while agreeing that factors other than harvest pressure appear to be impacting populations, disagrees that hunting pressure is a significant contributor. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the rule as adopted will deplete quail numbers. The department disagrees with the comment and responds that research and survey data indicate that the minor alteration in season length will not appreciably affect overall harvest. The most significant factor that affects quail populations is habitat, both quantity and quality, which is largely dependent on precipitation and is the primary driver of hatchling growth to maturity. No changes were made as a result of the comment.

One commenter opposed adoption and stated that quail season should open on November 1. The department agrees with the comment and responds that a change has been made; the rule as adopted establishes a November 1 opening day.

One commenter opposed adoption and stated that harvest regulations should remain as is until the threat of drought is gone. The department disagrees with the comment and responds, first, that the threat of drought is never absent, and second, that staff continuously monitor quail populations to assess the suitability of harvest regulations and pursue modifications necessary to ensure the sustainability of the resource. No changes were made as a result of the comment.

The department received 340 comments supporting adoption of the proposed amendment.

The department received six comments opposing adoption of the portion of the proposed amendment to §65.64 that clarified the boundaries of turkey zones in Falls County. None of the commenters provided a germane reason or rationale for opposing adoption.

The department received 205 comments supporting adoption of the proposed amendment.

The department received 12 comments opposing adoption of the portion of the proposed amendment to §65.64 that opened turkey seasons in Lubbock County. Of those comments, five provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated, "there is no way there are enough turkeys in Lubbock County" to justify or sustain open seasons. The department disagrees with the comment and responds that department population and habitat surveys indicate huntable populations exist in areas of suitable habitat. No changes were made as a result of the comment.

One commenter opposed adoption and stated that opening seasons in Lubbock County will not benefit the population. The department disagrees with the comment to the extent that an open season is unlikely to result in either depletion or waste of the resource. No changes were made as a result of the comment.

One commenter opposed adoption and stated, "there are too many birds to take." The department disagrees that there is any scenario in which turkey populations are so large or numerous that hunting is contraindicated. No changes were made as a result of the comment.

One commenter opposed adoption and stated that because the population is limited, take by firearm should be prohibited and all turkey hunting seasons should be archery-only seasons. The department disagrees with the comment and responds that in areas of suitable habitat in Lubbock County, turkey populations exist in numbers capable of sustaining moderate hunting pressure without regard for means of take. No changes were made as a result of the comment.

One commenter opposed adoption and stated that there should be a fall season in De Witt County. The department neither agrees nor disagrees with the comment and responds that the comment is not germane to the rule as proposed. No changes were made as a result of the comment.

The department received 225 comments supporting adoption of the proposed amendment.

DIVISION 1. GENERAL PROVISIONS

31 TAC §§65.7, 65.8, 65.10, 65.29

The amendments are adopted under the authority of Parks and Wildlife Code, Chapter 61, which requires the commission to regulate the periods of time when it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the means, methods, and places in which it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the species, quantity, age or size, and, to the extent possible, the sex of the game animals, game birds, or aquatic animal life authorized to be hunted, taken, or possessed; and the region, county, area, body of water, or portion of a county where game animals, game birds, or aquatic animal life may be hunted, taken, or possessed.

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DIVISION 2. OPEN SEASONS AND BAG LIMITS

31 TAC §§65.42, 65.62, 65.64

The amendments are adopted under the authority of Parks and Wildlife Code, Chapter 61, which requires the commission to regulate the periods of time when it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the means, methods, and places in which it is lawful to hunt, take, or possess game animals, game birds, or aquatic animal life in this state; the species, quantity, age or size, and, to the extent possible, the sex of the game animals, game birds, or aquatic animal life authorized to be hunted, taken, or possessed; and the region, county, area, body of water, or portion of a county where game animals, game birds, or aquatic animal life may be hunted, taken, or possessed.

§65.62. Quail: Open Seasons, Bag and Possession Limits.

(a) In all counties there is an open season for quail from the first day in November through the last day in February.

(b) Daily bag limit: 15 quail.

(c) Possession limit: 45 quail.

(d) There is no open season on Mearns' quail (commonly called fool's quail).

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SUBCHAPTER N. MIGRATORY GAME BIRD PROCLAMATION

31 TAC §§65.314 - 65.320

The Texas Parks and Wildlife Commission in a duly noticed meeting on March 27, 2025, adopted amendments to 31 TAC §§65.314 - 65.320, concerning the Migratory Game Bird Proclamation, without changes to the proposed text as published in the February 21, 2025, issue of the *Texas Register* (50 TexReg 963). The rules will not be republished.

The United States Fish and Wildlife Service (Service) issues annual frameworks for the hunting of migratory game birds in the United States. Regulations adopted by individual states may be more restrictive than the federal frameworks but may not be less restrictive. Responsibility for establishing seasons, bag limits, means, methods, and devices for harvesting migratory game birds within Service frameworks is delegated to the Texas Parks and Wildlife Commission (commission) under Parks and Wildlife Code, Chapter 64, Subchapter C.

With exceptions as noted, the amendments specify the season dates for hunting the various species of migratory game birds for 2025-2026 seasons. Except as noted in the discussion of the seasons for the Special White-winged Dove Area (SWWDA), teal, falconry, ducks in the High Plains Mallard Management Unit (HPMMU), the season dates for rails and gallinules, and the proposed daily bag limits for pintail, the rules as adopted retain the season structure and bag limits for all species of migratory game birds from last year while adjusting the season dates to allow for calendar shift (i.e., to ensure that seasons open on the desired day of the week), since dates from a previous year do not fall on the same days in following years.

The amendment to §65.314, concerning Doves (Mourning, White-Winged, White-Tipped, White-Fronted Doves), implements a slightly different structure for the SWWDA season than in years past. Under the federal frameworks, Texas is allowed 90 total days of dove hunting opportunity in the South Zone (which is also designated as a special management area for white-winged doves). Under the frameworks, the earliest possible date for full-day dove hunting in the South Dove Zone is September 14; however, Texas is also authorized to have up to six half-days of hunting opportunity between September 1 and September 19. Department survey data have consistently indicated strong hunter and landowner preference for the earliest possible hunting opportunity available under the federal frameworks, as well as for maximal weekend hunting opportunity during the SWWDA season, since nearly half of the hunters in the SWWDA zone travel from outside of the zone. In a typical year, this would take the form of two three-day weekends of half-day special white-winged opportunity beginning on the earliest day possible under the frameworks. The 2025-26 calendar, however, presents a challenge because September 1, 2025 (the earliest possible day for SWWDA hunting) falls on a Monday, so there are not two complete three-day weekends available before the full-day dove hunting can begin. The department has determined that in keeping with hunter and landowner preference, this year's SWWDA dates are best employed by implementing a five-day season structure of September 5-7 (a traditional three-day weekend) and September 12-13 (Friday and Saturday), which is the last two days before the earliest possible date that full-day dove hunting can be provided under the federal frameworks (September 14).

The amendment to §65.315, concerning Ducks, Coots, Mergansers, and Teal, reduces the length of the early teal season from 16 days to nine days, which is the maximum allowed under this year's federal frameworks. The amendment to §65.315 also increases the length of the HPMMU season by seven days. Under the federal frameworks, Texas is allowed 107 total days of duck hunting opportunity. Because the federal frameworks for 2025-26 mandate a seven-day reduction in early teal season opportunity, those seven days can be allocated elsewhere; therefore, the department proposes to add the seven days to the beginning of the season in the HPMMU to provide additional opportunity for species that arrive early in Texas, especially teal.

The amendment to §65.315, concerning Ducks, Coots, Mergansers, and Teal, also alters subsection (c) to increase the daily bag limit for pintails from one to three. The Service recently adopted a new Pintail Harvest Strategy that includes the option for a three-bird daily bag limit. In keeping with long-standing commission policy to provide the most liberal hunting opportunity possible under the federal frameworks, consistent with the tenets of sound biological management, the department has therefore increased the bag limit in accordance with the Service's harvest strategy.

The amendment to §65.319, concerning Gallinules, Rails, Snipe, Woodcock, implements a slightly different season structure for rails and gallinules in comparison to years past. Typically, the department establishes a split-season structure for rail and gallinule seasons, the first segment to run concurrently with the early teal season and the second segment to open concurrently with the South Zone duck season and run for 70 days (thereby utilizing the maximum number of days allotted for rail and gallinule seasons under the federal frameworks). Because of the seven-day reduction in the early teal season mandated under the federal frameworks, retaining the traditional season structure results in a nine-day first segment for rail and gallinule seasons, with seven days added to the end of the second segment, which the department believes optimizes hunting opportunity for rail and gallinule hunters.

The amendment to §65.320, concerning Extended Falconry Seasons, allows for expanded falconry opportunity for ducks, which is possible because of the additional seven days of opportunity resulting from the shortened early teal season discussed previously in this preamble.

The department received 129 comments opposing adoption of all or part of the proposed amendment to §65.314, concerning

Doves (Mourning, White-Winged, White-Tipped, White-Fronted Doves).

The department received 103 comments opposing adoption of the portion of the proposed amendment that established the season dates for the special season in the Special White Wing Dove Area (SWWDA). Of those comments, 19 provided a reason or rationale for opposing adoption.

One commenter opposed adoption and stated that "5 days hurts the hunters who are working those 5 days." The department neither agrees nor disagrees with the comment and responds that although it attempts to maximize where possible the use of weekends and holidays (when many people are not at work or school) to provide the greatest amount of hunting opportunity, there is no way to customize hunter opportunity based on work schedules of individual hunters. No changes were made as a result of the comment.

Two commenters opposed adoption and stated that because dove are more numerous than ever, the department should provide the maximum opportunity possible. The department agrees that while dove populations are robust and could easily sustain the six days of hunting opportunity available under the federal frameworks, the nature of the 2025 calendar frustrates the department's traditional and historic approach to season structure. Hunter and landowner surveys have long indicated a strong preference for the SWWDA opportunity to occur on weekends and if possible, over three-day weekends, and for the South Zone season to open on the earliest day possible under the federal frameworks. The federal frameworks specify that the SWWDA season must take place between September 1 and September 19 and designate September 14 as the earliest possible opening day for the South Zone. September 1 is a Monday and the opening day of the South Zone is September 14. Thus, the only three-day weekend of hunting opportunity possible in the SWWDA this year is September 5-7, leaving three additional days of opportunity to be placed. The only remaining opportunity involving a weekend is the 12th and the 13th (Friday and Saturday), leaving one day of SWWDA opportunity and no available weekends. The department has determined that creating a one-day segment of the SWWDA season (when historically those segments have consisted of two-day and three-day weekends), especially on a weekday, would likely lead to significant hunter and landowner confusion and is best avoided. Additionally, since the majority of participants in the SWWDA season travel from outside the zone, the department believes it is unlikely that many of those hunters would make the journey for only one day of hunting. The department notes that this situation will not occur every year. No changes were made as a result of the comments.

Two commenters opposed adoption and stated that six days of hunting is ideal and five days constitutes a reduction in hunting opportunity. The department agrees that technically the rule as adopted constitutes a one-day reduction in SWWDA hunting opportunity; however, as explained in the response to the previous comment, the inconvenience and possible confusion associated with providing an additional day of hunting opportunity is assessed by the department to outweigh the benefit, particularly in light of the infrequency of the circumstance. No changes were made as a result of the comments.

One commenter opposed adoption and stated that another weekend of SWWDA should be added. The department disagrees with the comment and responds that, as explained in an earlier response, hunter and landowner preference is for the earliest opening day for the South Zone possible under the federal frameworks, which this year is September 14, leaving no other weekends between September 1 and September 19 available for allocation of SWWDA hunting opportunity. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the SWWDA season should be September 1-2, 5-6, and 12-13. The department disagrees with the comment and responds that although such a season structure was considered, the department determined that because more than half the hunters who participate in the SWWDA live elsewhere and travel to South Texas to participate, the optimal use of the available opportunity would be a three-day weekend and a two-day opportunity including a Saturday. No changes were made as a result of the comment.

Two commenters opposed adoption and stated a preference for Saturday/Sunday hunts as opposed to Friday/Saturday hunts. The department agrees with the comment, but as explained in the preamble to the proposed rule and in responses to earlier comments, the 2025 calendar is such that only one Saturday/Sunday segment is possible this year and the department elected to create a three-day opportunity in order to maximize opportunity for the majority of hunters who live outside the zone. No changes were made as a result of the comments.

One commenter opposed adoption and stated that one day will not make much difference. The department agrees with the comment. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the season should start September 1 and either September 7 or January 22 should be removed so as to not exceed the total allowable days. The department disagrees with the comment and responds, as explained earlier, a single weekday of SWWDA opportunity is suboptimal because most participants in the SWWDA travel from outside the zone and many if not most are unlikely to do so for a single day of hunting. The department also responds that it is not necessary to remove days from the SWWDA season or the South Zone season, as removal of September 7 would mean the department is utilizing only four of the six available days in the SWWDA. No changes were made as a result of the comment.

One commenter opposed adoption and stated that dove season should be concurrent with deer season. The department disagrees with the comment and responds, as noted in earlier responses to comment, that hunter and landowner preference is for the earliest opening date possible under the federal frameworks in the South Dove Zone. No changes were made as a result of the comment.

One commenter opposed adoption and stated that dove season dates are based on out-of-date data that do not reflect population behaviors. The department disagrees with the comment and responds that the department engages in continuous monitoring and evaluation of dove populations. No changes were made as a result of the comment.

One commenter opposed adoption and stated that rules for hunters "can't fix habitat loss" and "allocating the funds better serves everyone." The department disagrees with the comment and responds that the rules as adopted are not intended to address habitat loss and it is unclear what the commenter is addressing with respect to allocation of funds, as the department is required by statute to manage migratory bird resources and the purpose of the rule is to establish and equitably distribute hunting opportunity under the tenets of sound biological management. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the South Zone season should open later when the weather is cooler. The department disagrees with the comment and responds that hunter and landowner preference strongly supports opening the South Zone on the earliest day possible under the federal frameworks. No changes were made as a result of the comment.

One commenter opposed adoption and stated that dove numbers are not what they used to be. The department disagrees with the comment and responds that dove populations statewide are robust. No changes were made as a result of the comment.

One commenter opposed adoption and stated that white-winged dove are plentiful. The department agrees with the comment. No changes were made as a result of the comment.

The department received 367 comments supporting adoption of the rule as proposed.

The department received 56 comments opposing adoption of the proposed amendment to §65.315, concerning Ducks, Coots, Mergansers, and Teal. Of those comments, three provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated, "he number of scaup. Scaup number seem to be extremely high in the south zone." The department assesses that the commenter advocates for a higher bag limit for scaup. The department disagrees with the comment and responds that the bag limit as adopted is the highest allowable under the federal frameworks. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the South Duck Zone should run from November 8- January 31 and the Central Duck Zone should run until January 31. The department disagrees with the comment and responds that the intent of the season structure as adopted is to provide the greatest opportunity when the greatest number of ducks are likely to be in any given zone. The department also responds that there is no Central Duck Zone. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the South Zone season should open on September 12. The department disagrees with the comment and responds that under the federal frameworks, the season in the South Zone cannot open earlier than September 14 this year. No changes were made as a result of the comment.

The department received 30 comments opposing adoption of the portion of the proposed amendment to §65.315 involving bag limits for pintail ducks. Of the 30 comments, 12 provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated that season lengths and bag limits should be reduced because duck populations are declining. The department disagrees with the comment and responds that migratory bird harvest rules in Texas are conservative and there is no biological reason to suspect that the rules as adopted create or contribute to negative population impacts. No changes were made as a result of the comment.

One commenter opposed adoption and stated, "here are more mallard ducks than pigtails down here." The department neither agrees nor disagrees with the comment and responds that seasons and bag limits for all species of ducks are based on scientific data rather than anecdotal observation, and in any case, mallard population dynamics are not of great significance with respect to management of pintail populations. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the increase of the daily bag limit for pintails is unwarranted in the face of population declines and the significant departure from the long-term average. The commenter further stated that the last time the bag limits for pintail were increased (1997), the results caused the bag limits to be reduced in following years. The department disagrees with the comment and responds that analysis and modeling developed by the Northern Pintail Working Group (a Service group of biological experts from state, provincial, and territorial agencies in the Atlantic, Mississippi, Central, and Pacific flyways who evaluate population and habitat information to make conservation recommendations) over the last six years have revealed that historic monitoring and management of northern pintails has been overly restrictive. The results show that for many decades the actual northern pintail populations have been underestimated by as much as a factor of four. Additionally, the new modelling indicates that additional harvest is sustainable, given that low harvest rates have exhibited near-zero effects with respect to northern pintail abundance on a year-to-year basis. No changes were made as a result of the comment.

Five commenters stated a desire for a two-bird daily bag limit, no more than one hen. The department disagrees with the comments and responds that, as noted in a response to an earlier comment, new modelling of population data has indicated that previous population estimates severely understated true population status. The department further notes that additional harvest at expected participation levels is not expected to exert negative population impacts. No changes were made as a result of the comments.

One commenter opposed adoption and stated that the rule will increase pressure on pintail populations and cause relocation in the future. The department disagrees with the comment and responds that it is highly unlikely that the increased bag limit, even if it causes significant additional hunter effort, would result in alteration of migration patterns. No changes were made as a result of the comment.

Two commenters opposed adoption and stated that the department's data is skewed and the increase in bag limit will reverse efforts to rebuild the pintail population. The department disagrees with the comments and responds that new modelling of population data has indicated that previous population estimate severely understated true population status and additional harvest at expected participation levels is not expected to exert negative population impacts. The department and the Service monitor pintail populations using a variety of indices on a constant basis, and the department is confident that if there are any negative population impacts, those trends will be detected quickly, and if necessary, appropriate alterations to the harvest strategy will be implemented. No changes were made as a result of the comments.

One commenter opposed adoption and stated that the increased bag limit should not apply to persons accompanied by paid hunting guides. The department disagrees with the comment and responds that harvest regulations for migratory birds represent an equitable distribution of harvest opportunity for all participants, that every person who purchases a hunting license and the appropriate stamp endorsement is entitled to the bag limit established by rule, and that there is no reason, biological or other-

wise, to establish separate bag limits for guided hunting parties. No changes were made as a result of the comment.

The department received 464 comments supporting adoption of the portion of the proposed rule that increased the bag limit for pintail ducks.

The department received 121 comments opposing adoption of the portion of the proposed amendment to §65.316, concerning Ducks, that decreased the season length of the early teal season. All of the commenters stated a preference for a longer season. The department disagrees with all the comments and responds that the season as adopted is the maximum season length possible under the federal frameworks. No changes were made as a result of the comments.

The department received 352 comments supporting adoption of the portion of the proposed amendment that decreased the season length for the early teal season.

The department received 45 comments opposing adoption of the portion of the proposed amendment to §65.315 that extended the duck season in the High Plains Mallard Management Unit (HPMMU). Of the comments, nine provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated that the season should be shortened, not lengthened. The department disagrees with the comment and responds that an extra week of hunting opportunity is unlikely to result in either excessive harvest or harvest significant enough to negatively impact duck populations. No changes were made as a result of the comment.

One commenter opposed adoption and stated concern that the department was eliminating hunting opportunity in one area while providing additional hunting opportunity in another. The department disagrees with the comment and responds that it is not taking opportunity. The federal frameworks have reduced the length of the early teal season by one week and the department has the option of shifting those days to another duck season segment elsewhere or losing them; thus, the season as adopted preserves hunting opportunity. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the season should not be lengthened because of the impact of drought on duck populations. The department disagrees with the commenter that drought has impacted duck populations in the HPMMU and responds that an additional week of harvest opportunity will not result in harm to the population. No changes were made as a result of the comment.

Two commenters opposed adoption and stated that the extra week should be added to the end of the season in order to provide concurrent hunting opportunity with geese. The department disagrees with the comment and responds that the season as adopted is intended to maximize the number of weekend days available for hunting. No changes were made as a result of the comments.

Three commenters opposed adoption and stated that the extra week of opportunity should be added to the North and South zones as well. The department disagrees with the comment and responds that the seasons for the North and South zones as proposed each utilize the 74-day maximum season length allowed under the federal frameworks. No changes were made as a result of the comment.

One commenter opposed adoption and stated dissatisfaction with hunting opportunity on public hunting lands. The department disagrees with the comment and responds that there is no connection or relationship between the statewide bag limit established by the rule as adopted and the administration of the department's public hunting program. No changes were made as a result of the comment.

The department received 443 comments supporting adoption of the portion of the proposed amendment to §65.316, concerning Ducks, that increased the season length in the High Plains Mallard Management Unit (HPMMU).

The department received 19 comments opposing adoption of the proposed amendment to §65.316, concerning Geese. Of the 19 comments, six provided a reason or rationale for opposing adoption. Those comments, accompanied by the department's response to each, follow.

One commenter opposed adoption and stated that the later goose season start allows the season for snow geese to be extended to February 22, and that it is un-American for hunting to be over in Texas when seasons are still open in northern states. The department disagrees with the comment and responds that under the rule as adopted, goose seasons do not start later than in previous years and that the season structure is intended to provide as much concurrent hunting opportunity for other species of waterfowl as possible. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the season for light geese in the Eastern Zone should begin two weeks later because light geese arrive in greater numbers beginning in late November. The department disagrees with the comment and responds that the season as adopted is intended to provide maximum concurrent opportunity for all species of waterfowl by having the Eastern Goose Zone and the South Duck Zone open on the same day and utilizing the full 107 days of goose hunting provided under the federal frameworks. No changes were made as a result of the comment.

One commenter opposed adoption and stated that there should be an early season for dark geese in the HPMMU. The department disagrees with the comment and responds that the federal frameworks do not allow for an early season for dark geese in Texas. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the light goose season should close on a Sunday to provide three full weekends of hunting opportunity. The department understands the comment to be in reference to the early Canada goose season, because the light goose season in the Eastern Zone is open for over three months, which includes far more than three weekends. In that case, the department disagrees and responds that providing additional days of early Canada goose opportunity would necessitate the truncation of goose seasons later in the year, as the federal frameworks do not allow more than 107 total days of hunting opportunity. No changes were made as a result of the comment.

One commenter opposed adoption and stated that the Light Goose Conservation Order (LGCO) should be reinstated. The department disagrees with the comment and responds that the commission last year eliminated the LGCO and restoration of the LGCO is not contemplated by this rulemaking. No changes were made as a result of the comment.

One commenter opposed adoption and stated that goose and crane seasons should "be like they used to be." The department disagrees with the comment and responds that the current season structures for goose and crane have been in place for many years, so it is unclear what the comment means. No changes were made as a result of the comment.

The department received 226 comments supporting adoption of the rule as proposed.

The department received 19 comments opposing adoption of the proposed amendment to §65.317, regarding Special Youth, Active-Duty Military, and Military Veteran Seasons. No commenter provided a reason or rationale for opposing adoption.

The department received 226 comments supporting adoption of the proposed rule.

The department received 19 comments opposing adoption of the proposed amendment to §65.318, regarding Sandhill Crane. No commenter provided a reason or rationale for opposing adoption.

The department received 226 comments supporting adoption of the proposed rule.

The department received 20 comments opposing adoption of the proposed amendment to §65.319, regarding Gallinules, Rails, Snipe, Woodcock. One of the commenters provided a reason or rationale for opposing adoption.

The commenter stated that the season should not be reduced if there isn't a population decline. The department disagrees with the comment and responds that the rule as adopted provides the maximum hunting opportunity possible for gallinules, rails, snipe, and woodcock under the federal frameworks. No changes were made as a result of the comment.

The department received 332 comments supporting adoption of the proposed rule.

The department received one comment opposing adoption of the proposed amendment to §65.320, concerning Extended Falconry Seasons.

The commenter stated that falconers already "get more opportunities" than gun hunters. The department disagrees with the comment and responds that the rule as adopted does not affect any other season for migratory game birds, the federal frameworks provide for seasons for the take of migratory game birds by means of falconry, and the extended falconry season does not occur at the expense of days of opportunity for gun hunters No changes were made as a result of the comment.

The department received 226 comments supporting adoption of the proposed rule.

The amendments are adopted under the authority of Parks and Wildlife Code, Chapter 64, which authorizes the commission and the executive director to provide the open season and means, methods, and devices for the hunting and possessing of migratory game birds.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 10, 2025.

TRD-202502357

James Murphy
General Counsel
Texas Parks and Wildlife Department
Effective date: September 1, 2025
Proposal publication date: February 21, 2025
For further information, please call: (512) 389-4775

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TITLE 37. PUBLIC SAFETY AND CORRECTIONS

PART 7. TEXAS COMMISSION ON LAW ENFORCEMENT

CHAPTER 211. ADMINISTRATION

37 TAC §211.30

The Texas Commission on Law Enforcement (Commission) adopts amended 37 Texas Administrative Code §211.30, Chief Administrator Responsibilities for Class A and B Waivers, without changes to the proposed text as published in the May 2, 2025 issue of the *Texas Register* (50 TexReg 2691). The rule will not be republished.

This adopted amended rule requires chief administrators to submit an applicant's personal history statement and the law enforcement agency's background investigation report of the applicant as part of the waiver request. This will aid the Commission during the Commission's review of the waiver request and will also ensure that the agency has completed the required background investigation before submitting a waiver request to the Commission, which will better support the law enforcement agency and the Commission in making well-informed decisions regarding the licensing and appointment of an applicant with a criminal record.

The public comment period began on May 2, 2025, and ended on June 12, 2025, at the conclusion of the public meeting of the Commission. No public comments were received regarding adoption of the amended rule as proposed.

The amended rule is adopted under Texas Occupations Code §1701.151, General Powers of Commission; Rulemaking Authority. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701 and to establish minimum standards related to the competence and reliability, including the education, training, physical, and mental standards, for licensing as an officer, county jailer, public security officer, or telecommunicator.

The amended rule as adopted affects or implements Texas Occupations Code §1701.151, General Powers of Commission; Rulemaking Authority. No other code, article, or statute is affected by this adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502243

Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
Effective date: August 1, 2025
Proposal publication date: May 2, 2025
For further information, please call: (512) 936-7700

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CHAPTER 217. ENROLLMENT, LICENSING, APPOINTMENT, AND SEPARATION

37 TAC §217.7

The Texas Commission on Law Enforcement (Commission) adopts amended 37 Texas Administrative Code §217.7, Reporting Appointment and Separation of a Licensee, without changes to the proposed text as published in the May 9, 2025 issue of the *Texas Register* (50 TexReg 2754). The rule will not be republished.

This adopted amended rule requires all applicants and licensees to be fingerprinted and subjected to a fingerprint-based criminal background check before being appointed by a law enforcement agency, replacing the name-based criminal background check. This conforms with the recommendations made by an advisory committee and approved by the Commission in the Hiring Procedures Model Policy, as required by the addition of Texas Occupations Code §1701.4522 made by Senate Bill 1445 (88R). The adopted amended rule increases the likelihood that agencies will identify disqualifying criminal charges or offenses during the background investigation, resulting in fewer appointments of ineligible individuals. This is also related to the elimination of the requirement that licensees and appointing agencies submit the Criminal Charges Notification (E-1) form to the Commission when a licensee was arrested or charged with a crime.

The public comment period began on May 9, 2025, and ended on June 12, 2025, at the conclusion of the public meeting of the Commission. No public comments were received regarding adoption of the amended rule as proposed.

The amended rule is adopted under Texas Occupations Code §1701.151, General Powers of Commission; Rulemaking Authority, §1701.303, License Application; Duties of Appointing Entity, and §1701.451, Preemployment Procedure. Texas Occupations Code §1701.151 authorizes the Commission to adopt rules for the administration of Occupations Code Chapter 1701. Texas Occupations Code §1701.303 requires an agency to have a licensee's criminal history record information and to have a licensee fingerprinted to disclose any criminal record if there has been a 180-day break in service. Texas Occupations Code §1701.451 requires an agency to obtain and review criminal history record information before appointing a licensee.

The amended rule as adopted affects or implements Texas Occupations Code §1701.151, General Powers of Commission; Rulemaking Authority, §1701.303, License Application; Duties of Appointing Entity, and §1701.451, Preemployment Procedure. No other code, article, or statute is affected by this adoption.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 3, 2025.

TRD-202502245

Gregory Stevens
Executive Director
Texas Commission on Law Enforcement
Effective date: August 1, 2025
Proposal publication date: May 9, 2025
For further information, please call: (512) 936-7700

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TITLE 40. SOCIAL SERVICES AND ASSISTANCE

PART 1. DEPARTMENT OF AGING AND DISABILITY SERVICES

CHAPTER 4. RIGHTS AND PROTECTION OF INDIVIDUALS RECEIVING INTELLECTUAL DISABILITY SERVICES

SUBCHAPTER A. PROTECTED HEALTH INFORMATION

40 TAC §§4.1 - 4.8

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Subchapter A, consisting of §4.1, concerning Purpose; §4.2, concerning Application; §4.3, concerning Definitions; §4.4, concerning Requirements; §4.5, concerning Regulations and Statutes Governing Confidentiality of Protected Health Information; §4.6, concerning Exhibit; §4.7, concerning References; and §4.8, concerning Distribution.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3441). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Aging and Disability Services was abolished September 1, 2017, after all its functions were transferred to HHSC. The repeals remove rules that are no longer necessary.

The rules reference federal privacy laws, rules, and regulations that are now addressed in the Local Intellectual and Developmental Disability Authority performance contract.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 14, 2025.

TRD-202502449
Karen Ray
Chief Counsel
Department of Aging and Disability Services
Effective date: August 3, 2025
Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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CHAPTER 5. PROVIDER CLINICAL RESPONSIBILITIES--INTELLECTUAL DISABILITY SERVICES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 5, Subchapter A, consisting of §5.1, concerning Purpose; §5.2, concerning Application; 5.3, concerning Definitions; 5.4, concerning Philosophy; 5.5, concerning General Principles; §5.6, concerning Evaluation and Diagnosis; §5.7, concerning Prescribing Parameters; 5.8, concerning Emergency Use of Psychoactive Medication; §5.9, concerning Consent and Patient Education; §5.10, concerning Medication Monitoring; §5.11, concerning Special Populations; §5.12, concerning Quality Improvement; §5.13, concerning References; §5.14, concerning Distribution; and Subchapter I, consisting of §5.401, concerning Purpose; §5.402, concerning Application; §5.403, concerning Definitions; §5.404, concerning General Provisions; §5.405, concerning General Principles for Behavior Therapy Programs; §5.406, concerning Development, Implementation, and Monitoring of Effectiveness of Behavior Therapy Programs; §5.407, concerning Requirement to Obtain Legally Adequate Consent, Consent, or Authorization; §5.408, concerning Use of Restraint; §5.409, concerning Documenting and Reporting Behavior Therapy Programs That Use Highly Restrictive Procedures; §5.411, concerning References; and §5.412, concerning Distribution.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3442). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Aging and Disability Services was abolished September 1, 2017, after all its functions were transferred to HHSC. The repeals remove rules that are no longer necessary and not required by statute.

The topics of these rules are required by standard licensing requirements for medical professionals or by the federal conditions of participation developed by the Centers for Medicare and Medicaid Services for intermediate care facilities for individuals with intellectual disabilities.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. PRESCRIBING OF PSYCHOACTIVE MEDICATION

40 TAC §§5.1 - 5.14

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
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For further information, please call: (512) 221-9021

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SUBCHAPTER I. BEHAVIOR THERAPY IN STATE FACILITIES

40 TAC §§5.401 - 5.409, 5.411, 5.412

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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CHAPTER 7. DADS ADMINISTRATIVE RESPONSIBILITIES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 7, Subchapter A, consisting of §7.1, concerning Purpose; §7.6, concerning Assignment and Use of Pooled Vehicles; §7.9, concerning Material Safety Data Sheets; §7.23, concerning Unauthorized Departures That May Have Unusual Consequences; §7.33, concerning Mail for Staff Residing On Campus; §7.34, concerning Commercial Solicitation on Grounds; Subchapter B, consisting of §7.51, concerning Purpose; §7.52, concerning Application; §7.53, concerning Definitions; §7.54, concerning Procurement; §7.55, concerning Accountability; §7.56, concerning Provisions for All Contracts; §7.57, concerning Additional Requirements for Specific Contracts; §7.58, concerning Contract Extension or Renewal; §7.60, concerning

Protest and Appeal Procedures; §7.61, concerning Contract Monitoring; §7.62, concerning Remedies and Sanctions for All Contracts Except Construction Contracts; §7.63, concerning Negotiation and Mediation; §7.64, concerning References; §7.65, concerning Distribution; Subchapter D, consisting of §7.159, concerning References; §7.160, concerning Distribution; Subchapter S, Division 1 consisting of §7.901, concerning Purpose; §7.902, concerning Applicability; §7.903, concerning Definitions; §7.904, concerning Prerequisites to Suit; §7.905, concerning Sovereign Immunity; Division 2 consisting of §7.906, concerning Notice of Claim of Breach of Contract; §7.907, concerning Agency Counterclaim; §7.908, concerning Request for Voluntary Disclosure of Additional Information; §7.909, concerning Duty to Negotiate; §7.910, concerning Timetable; §7.911, concerning Conduct of Negotiation; §7.912, concerning Settlement Approval Procedures; §7.913, concerning Settlement Agreement; §7.914, concerning Costs of Negotiation; §7.915, concerning Request for Contested Case Hearing; Division 3, consisting of §7.916, concerning Mediation Timetable; §7.917, concerning Conduct of Mediation; §7.918, concerning Agreement to Mediate; §7.919, concerning Qualifications and Immunity of the Mediator; §7.920, concerning Confidentiality of Mediation and Final Settlement Agreement; §7.921, concerning Costs of Mediation; §7.922, concerning Settlement Approval Procedures; §7.923, concerning Initial Settlement Agreement; §7.924, concerning Final Settlement Agreement; and §7.925, concerning Referral to the State Office of Administrative Hearings.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3444). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Aging and Disability Services was abolished September 1, 2017, after all its functions were transferred to HHSC. The repeals remove rules that are no longer necessary.

These rules are duplicative of agency rules located in Title 1 TAC, Chapter 391 and agency policies.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. STANDARD OPERATING PROCEDURES

40 TAC §§7.1, 7.6, 7.9, 7.23, 7.33, 7.34

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER B. CONTRACTS MANAGEMENT FOR STATE FACILITIES AND CENTRAL OFFICE

40 TAC §§7.51 - 7.58, 7.60 - 7.65

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER D. PERMANENT IMPROVEMENTS DONATED BY INDIVIDUALS OR COMMUNITY GROUPS

40 TAC §7.159, §7.160

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER S. NEGOTIATION AND MEDIATION OF CERTAIN CONTRACT CLAIMS AGAINST DADS

DIVISION 1. GENERAL

40 TAC §§7.901 - 7.905

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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DIVISION 2. NEGOTIATION

40 TAC §§7.906 - 7.915

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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For further information, please call: (512) 221-9021

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DIVISION 3. MEDIATION

40 TAC §§7.916 - 7.925

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
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Proposal publication date: June 6, 2025
For further information, please call: (512) 221-9021

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CHAPTER 71. INFORMATION PRACTICES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 71 consisting of §71.101, concerning Definitions; §71.102, concerning Requests for Information; §71.103, concerning Schedule of Fees; §71.201, concerning Definitions; §71.202, concerning Confidential Nature of Client Information; §71.203, concerning Client Access to Own Information; §71.204, concerning Release for Death Notification; §71.205, concerning Release for Eligibility Verification, Billing, and Service Delivery; §71.206, concerning Release under Client Authorization; §71.301, concerning Definitions; §71.302, concerning Right of Access to Your Individually Identifiable Health Information; §71.303, concerning Designated Record Sets; §71.304, concerning Right to Report of Disclosures; §71.305, concerning Fees for Copies of Information; §71.306, concerning Requests for Further Limits on Uses and Disclosures of Individually Identifiable Health Information; §71.307, concerning Requests for Communication by Different Means or at Different Locations; §71.308, concerning Verification of Identity and Authority; §71.309, concerning Disclosure of Health Information; §71.310, concerning Complaints; §71.401, concerning Right to Correct Incorrect Information; §71.402, concerning Requesting a Correction; §71.403, concerning Where to Send a Request for Correction; §71.404, concerning The Correction Review; and §71.405, concerning Correction of Individually Identifiable Health Information in a Designated Record Set

All sections are adopted without changes to the proposed text as published in the May 23, 2025, issue of the *Texas Register* (50 TexReg 3109). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

The repeals are necessary to remove obsolete rules adopted in 2003 by the Texas Department of Human Services concerning information practices. These rules are outdated, duplicative of current rules, and contain incorrect agency information.

COMMENTS

The 21-day comment period ended June 13, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. DISCLOSURE OF INFORMATION

40 TAC §§71.101 - 71.103

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
Effective date: August 3, 2025
Proposal publication date: May 23, 2025
For further information, please call: (512) 221-9021

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SUBCHAPTER B. CLIENT INFORMATION

40 TAC §§71.201 - 71.206

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
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SUBCHAPTER C. PRIVACY OF HEALTH INFORMATION

40 TAC §§71.301 - 71.310

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
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For further information, please call: (512) 221-9021

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SUBCHAPTER D. CORRECTING INFORMATION

40 TAC §§71.401 - 71.405

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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CHAPTER 72. MEMORANDUM OF UNDERSTANDING WITH OTHER STATE AGENCIES

SUBCHAPTER L. MOU--CAPACITY ASSESSMENT FOR SELF CARE AND FINANCIAL MANAGEMENT

40 TAC §72.5001

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Subchapter L, consisting of §72.5001, concerning Memorandum of Understanding Concerning Capacity Assessment for Self Care and Financial Management.

Section 72.5001 is adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3446). This rule will not be republished.

BACKGROUND AND JUSTIFICATION

The rule in Texas Administrative Code, Title 40, Chapter 72, Subchapter L was authorized by Texas Health and Safety Code §533.044, which was repealed, effective April 1, 2015. During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Aging and Disability Services was abolished September 1, 2017, after

all its functions were transferred to HHSC. The repeal removes a rule that is rule in no longer necessary.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeal.

STATUTORY AUTHORITY

The repeal is adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Aging and Disability Services
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CHAPTER 77. EMPLOYMENT PRACTICES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Chapter 77, Subchapter A, consisting of §77.1, concerning What is the purpose of this chapter; §77.2, concerning What do the words and terms in this chapter mean; Subchapter B, consisting of §77.11, concerning What is the training activities program; §77.12, concerning Who is eligible to participate in the training activities program; §77.13, concerning Who should I ask if I want to participate in the training activities program; §77.14, concerning What are my obligations if I participate in the training activities program; §77.15, concerning Can I get a waiver for any of my obligations; §77.16, concerning How do I get a waiver for any of my obligations; §77.17, concerning What happens if I am placed on corrective action while I am participating in the training activities program; Subchapter C, consisting of §77.31, concerning What is the education assistance program; §77.32, concerning Am I eligible to participate in the education assistance program; §77.33, concerning Who do I ask if I want to participate in the education assistance program; §77.34, concerning What am I required to do if I participate in the education assistance program; §77.35, concerning What if I cannot work full time and keep my class schedule; §77.36, concerning What type of institution of higher education must I attend; §77.37, concerning What financial assistance is available; §77.38, concerning How often does DHS review my participation in the education assistance program; §77.39, concerning In what situations would DHS cancel my education assistance agreement and my participation in the program; §77.40, concerning If my participation is cancelled, will I have to repay any money to DHS; §77.41, concerning Can I get a waiver, deferment, or reduction of my repayment obligation; §77.42, concerning How do I ask for a waiver, deferment, or reduction; §77.43, concerning If my participation in the education assistance program is cancelled, can I participate in the program in the future; and §77.44, concerning What happens if I am placed on corrective action while I am participating in the education assistance program.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3447). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Aging and Disability Services was abolished September 1, 2017, after all its functions were transferred to HHSC. The repeals remove rules that are no longer necessary.

These rules are duplicative of agency rules located in Title 1 TAC, Chapter 396 and agency policies regarding employee training and education.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. INTRODUCTION

40 TAC §77.1, §77.2

STATUTORY AUTHORITY

The repeals adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER B. EMPLOYEE TRAINING

40 TAC §§77.11 - 77.17

STATUTORY AUTHORITY

The repeals adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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SUBCHAPTER C. EDUCATION ASSISTANCE PROGRAM

40 TAC §§77.31 - 77.44

STATUTORY AUTHORITY

The repeals adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Department of Aging and Disability Services
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PART 2. DEPARTMENT OF ASSISTIVE AND REHABILITATIVE SERVICES

CHAPTER 101. ADMINISTRATIVE RULES AND PROCEDURES

The executive commissioner of the Texas Health and Human Services Commission (HHSC) adopts the repeal of Subchapter A, consisting of §101.101, concerning Purpose; §101.103, concerning Legal Authority; §101.105, concerning Definitions; §101.107, concerning Opportunities for Citizen Participation; §101.109, concerning Complaints; §101.111, concerning Cooperation with Other Public Agencies; §101.113, concerning Criminal History Information on Applicants for Employment; §101.115, concerning Use of Criminal History Information in Contracting; §101.117, concerning Fees for Department Publications; §101.119, concerning Gifts and Donations to DARS; §101.121, concerning Qualified Vocational Rehabilitation Counselor (QVRC); Subchapter B, consisting of §101.201, concerning Purpose; §101.203, concerning Legal Authority; §101.205, concerning Definitions; §101.207, concerning Adoption of Rules; Subchapter D, consisting of §101.805, concerning Definitions; §101.807, concerning Privacy Policies; §101.809, concerning Confidentiality of Consumer Information in Vocational Rehabilitation Program; §101.811, concerning Confidentiality of Consumer Information in the Specialized Telecommunications Assistance Program; §101.813, concerning Use of Consumer Information in the Deaf and Hard of Hearing Driver Identification Program; Subchapter F, consisting of §101.1307, concerning Memorandum of Understanding Regarding Continuity of Care for Physically Disabled Inmates; §101.1309, concerning Memorandum of Understanding Regarding the Exchange and Distribution of Public Awareness Information; and §101.1311, concerning Memorandum of Understanding Concerning Coordination of Services to Disabled Persons.

All sections are adopted without changes to the proposed text as published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3449). These rules will not be republished.

BACKGROUND AND JUSTIFICATION

During the 84th Legislative Session, the Texas Legislature passed Senate Bill 200, addressing the reorganization of health and human services delivery in Texas. As a result, the Department of Assistive and Rehabilitative Services was abolished September 1, 2017, after all its functions were transferred to HHSC and the Department of Family and Protective Services. The repeals remove rules that are no longer necessary.

These rules are duplicative of agency rules located in Title 1 TAC, Chapters 390 and 391 and agency policies regarding administration and procedures.

COMMENTS

The 21-day comment period ended June 27, 2025. During this period, HHSC did not receive any comments regarding the proposed repeals.

SUBCHAPTER A. GENERAL RULES

40 TAC §§101.101, 101.103, 101.105, 101.107, 101.109, 101.111, 101.113, 101.115, 101.117, 101.119, 101.121

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Assistive and Rehabilitative Services
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For further information, please call: (512) 221-9021

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SUBCHAPTER B. HISTORICALLY UNDERUTILIZED BUSINESSES

40 TAC §§101.201, 101.203, 101.205, 101.207

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
Chief Counsel
Department of Assistive and Rehabilitative Services
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SUBCHAPTER D. PRIVACY AND CONFIDENTIALITY

40 TAC §§101.805, 101.807, 101.809, 101.811, 101.813

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
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Department of Assistive and Rehabilitative Services
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SUBCHAPTER F. MEMORANDA OF UNDERSTANDING WITH OTHER STATE AGENCIES

40 TAC §§101.1307, 101.1309, 101.1311

STATUTORY AUTHORITY

The repeals are adopted under Texas Government Code §524.0151, which provides that the executive commissioner of HHSC shall adopt rules for the operation and provision of services by the health and human services system.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

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Karen Ray
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Department of Assistive and Rehabilitative Services
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PART 5. TEXAS VETERANS LAND BOARD

CHAPTER 175. GENERAL RULES OF THE VETERANS LAND BOARD

SUBCHAPTER A. GENERAL RULES OF CONTRACT FOR DEED AND FINANCING FOR LAND

40 TAC §§175.1, 175.2, 175.4 - 175.15, 175.17 - 175.19, 175.21, 175.22

The Texas Veterans Land Board (Board) adopts the amendments to Texas Administrative Code, Title 40, Part 5, Chapter 175, Subchapter A, §§175.1, 175.2, 175.4 - 175.15, 175.17 - 175.19, 175.21, and 175.22. The amended rules are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3217). The amended rules will not be republished.

No public comments were received on the adopted rule amendments.

The Board identified the need for the amendments during its review of this subchapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved the adoption of these amendments.

The adopted rule amendments to §175.2. remove definitions for the Board and Veterans Land Program because they are provided for in Section 161.001 of the Texas Natural Resources Code (Code), specify that a veteran can hold only one loan originated for that veteran, update a reference to the definition of "missing/missing in action," update citations to the definition for "surviving spouse," relocate provisions on the determination of evidence of service in the Armed Forces of Vietnam to improve the rule's readability, and change provision pertaining to discharge status to limit eligibility for the loan benefits of the Veterans Land Program and other Board loan programs to those who received discharge types of honorable, general, or medical.

The adopted rule amendment to §175.5 separates the provisions in a subsection into two subsection to improve the rule's readability.

The adopted rule amendment to §175.8 removes outdated language.

The adopted rule amendment to §175.11 clarifies provisions on interest rates pertaining to transferred contracts for sale and purchase.

The adopted rule amendments to §175.12 remove a subsection and relocated it to §175.13, which is the more appropriate rule because it contains all provisions on land improvements. The adopted amendments also update a reference to §175.4.

As mentioned, the adopted rule amendment to §175.13 adds a subsection of §175.12 to bring all provisions in the chapter involving land improvements into one subsection and make references to the Chairman consistent with how the term is used throughout this chapter.

The adopted rule amendment to §175.15 updates a reference to the Texas Department of Transportation.

The adopted rule amendments to §175.17 add a fee that the Board may charge for the costs of a credit report for processing a loan.

The adopted rule amendments to §175.18 update a reference to §175.2 of this chapter, update a reference to Chapter 161 of the Texas Natural Resources Code, makes references to the Chairman consistent with how the term is used throughout this chapter.

The adopted rule amendments to §175.22 remove three subsections because their provisions are located in Sections 161.013 and 161.062 of the Texas Natural Resources Code and Section 49-b(b) of the Texas Constitution and is thus superfluous, and update a reference to the chairman.

In addition, the title of this subchapter is changed to "General Rules of Contract for Deed and Financing for Land" to specify the rules' subject matter.

Also, throughout this chapter, references to the Board are made lower-case to align with their occurrences throughout Chapters 161, 162, and 164 of the Code, references to this chapter are changed from "title" to "chapter," as the former is generally used throughout the Texas Administrative Code, citations are updated, language is updated, and grammatical and editorial changes to language are made to improve the rule's readability.

Statutory Authority.

Section 161.001 of the Natural Resources Code ("Code"), which allows the Board to change its definition of "veteran" in Chapter 161 to protect the best interests of the Veterans Land Program.

Section 161.063 of the Code, which allows the Board to adopt rules and procedures it considers necessary to ensure the integrity of the Program.

Section 161.232 of the Code, which requires the Board to adopt rules for land sales under the Program.

Section 161.236 of the Code, which allows the Board to set rules to determine the number of tracts of land a veteran may purchase under the Program.

Section 161.281 of the Code, which allows the Board to waive land inspection requirements by rule.

Section 161.284 of the Code, which allows the Board to require an on-site meeting between a land appraiser and a veteran purchaser by rule.

Section 161.362 of the Code, which allows the Board to adopt rules related to insurance requirements under the Program.

Section 161.504 of the Code, which allows the Board to set rules to determine the number of loans a veteran purchaser may receive under the Program.

Section 161.508 of the Code, which requires the Board to adopt rules relating to fees, charges, and interest rates that may be charged by Program-participating lending institutions

Section 161.512 of the Code, which allows the Board by rule to increase interest rates and accelerate repayments on loans.

Section 161.513 of the Code, which requires the Board to adopt rules setting land loan foreclosure proceedings.

The code affected by the proposed amendments is Chapter 161 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502263
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

SUBCHAPTER B. LAND MORTGAGE FINANCING

40 TAC §§175.51 - 175.56, 175.58, 175.59, 175.61, 175.62

The Texas Veterans Land Board (Board) adopts the amendments to Texas Administrative Code, Title 40, Part 5, Chapter 175, Subchapter B, §§175.51 - 175.56, 175.58, 175.59, 175.61, and 175.62. The amended rules are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3224). The amended rules will not be republished.

No public comments were received on the adopted rule amendments.

The Board identified the need for the amendments during its review of this subchapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved the adoption of these amendments.

The adopted rule amendments to §175.51 remove definitions for "lending institution" and "loan" or "mortgage" loans because these terms are provided for near verbatim in Section 161.502 of the Texas Natural Resources Code and update the name of Subchapter A of this chapter.

The adopted rule amendment to §175.54 removes language from a subsection requiring that certain interests secure approved loans because this requirement is provided for in Section 161.505 of the Code.

The adopted rule amendments to §175.56 remove language from a subsection giving the Board authority to approve third party loan fees and a subsection giving the Board authority to set loan interest rates because they are provided for in Section 161.508 of the Code.

In addition, the title of this subchapter is changed to "Land Mortgage Financing" to specify the type of mortgage financing under this chapter.

Also, throughout this chapter, references to the Board are made lower-case to align with their occurrences throughout Chapters

161, 162, and 164 of the Texas Natural Resources Code, and references to this chapter are changed from "title" to "chapter," as the former is generally used throughout the Texas Administrative Code.

Furthermore, editorial changes are made throughout this chapter to correct grammar, update and correct citations, remove superfluous or outdated language, and improve the rules' readability.

Statutory Authority.

Section 161.063 of the Texas Natural Resources Code ("Code"), which gives the Board broad rulemaking authority under Chapter 161 of the Code, i.e., the Board's enabling statute that also provides for the Veterans Land Program (Program);

Section 161.503 of the Code, which requires the Board to adopt rules necessary to implement Chapter 161, Subchapter K, which pertains to loans issued under the Program;

Section 161.504, which allows the Board to determine the number of loans a person may receive under Subchapter K by rule; and

Section 161.508 of the Code, which requires the Board to adopt rules relating to and limiting fees, charges, and interest rates collected or charged by a lending institution in connection with financing land related to the Program.

The code affected by the proposed amendments is Chapter 161 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502265
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

SUBCHAPTER C. PROCEDURES FOR ALTERNATIVE DISPUTE RESOLUTION

40 TAC §§175.100 - 175.108, 175.110, 175.111

The Texas Veterans Land Board ("Board") adopts the amendments to Texas Administrative Code, Part 5, Chapter 175, Subchapter C, §§175.100 - 175.108, §175.110, and §175.111. The amended rules are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3227). The amended rules will not be republished.

No public comments were received on the adopted rule amendments.

The Board identified the need for the amendments during its review of this subchapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved the adoption of these amendments.

The adopted rule amendments to §175.100 update citations to the Administrative Procedures Act and the Texas Civil Practice and Remedies Code and make references to the Governmental Disputes Resolution Act and Alternative Disputes Resolutions Act consistent with §175.101.

The adopted rule amendments to §175.101 remove unnecessary definitions for the Board, the Commissioner, and the Executive Secretary, as those terms are defined in Chapter 161 of the Texas Natural Resources Code ("Code"); remove a redundant section for the definition of Alternative Dispute Resolution in Section 2009.005 of the Texas Government Code; add a definition for "ADR Coordinator" to account for its frequency in this subchapter; update a definition for the Commissioner to reflect the position's responsibilities; and update citations.

The adopted rule amendment to §175.103 makes qualifications for selection as an ADR Coordinator or Impartial Third Party disjunctive to reflect the rule's meaning.

The adopted rule amendment to §175.104 corrects a reference to ADR Coordinator training requirements.

The adopted rule amendments to §175.105 revise a citation to Governmental Dispute Resolution Act, Texas Government Code, Chapter 2009, changes references to the Board from "agency" to "board," and remove three responsibilities of the ADR Coordinator that are already provided for in the ADR Coordinator's responsibilities under Section 161.036 of the Texas Natural Resources Code.

The adopted rule amendment to §175.107 revises a citation to the Governmental Dispute Resolution Act, Texas Government Code, Chapter 2009.

The adopted rule amendment to §175.108 removes a reference to a nonexistent form used to request use of the alternative dispute resolution process to replace it with a request to the Board's ADR coordinator.

The adopted rule amendment to §175.111 specifies a reference to the Public Information Act.

In addition, throughout this chapter, references to the General Land Office and Commissioner are changed to the Board and chairman, respectively, as these rules pertain to the Board.

Also, throughout this chapter, references to the Board, the Commissioner, and the Executive Secretary are made lower-case to align with their occurrences throughout Chapters 161, 162, and 164 of the Code. Also, editorial changes are made throughout this chapter to correct grammar, remove superfluous or outdated language, and improve the rules' readability.

STATUTORY AUTHORITY.

Section 161.036 of the Texas Natural Resources Code ("Code"), which requires the Board to develop a policy to encourage the use of ADR procedures under Chapter 2009 of the Texas Government Code and in accordance with to any guidelines issued by the State Office of Administrative Hearings;

Section 161.063 of the Code, which gives the Board general rulemaking authority for Chapter 161; and

Section 2009.051 of the Texas Government Code, which allows state agencies subject to Chapter 2001 of the Code to develop ADR procedures by rule.

The codes affected by the adopted amendments are Chapter 161 of the Texas Natural Resources Code and Chapter 2009 of the Texas Government Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502266
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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CHAPTER 176. STATE VETERANS HOMES

The Texas Veterans Land Board ("Board") adopts the amendments to Texas Administrative Code, Title 40, Part 5, Chapter 176, Sections - §§176.1, 176.3 - 176.7, and 176.9, and the repeals of §§176.2, 176.8, 176.10, and 176.11. The amended and repealed rules are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3230). The amended and repealed rules will not be republished.

No public comments were received on the adopted rule amendments and repeals.

The Board identified the need for the amendments and repeals during its review of this chapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved the adoption of these amendments and repeals.

The adopted rule amendments to §176.1 remove definitions for the Board and "chairman," as these terms are already defined in the Chapter 161 of the Texas Natural Resources Code, i.e., the Board's enabling statute; remove a definition for "bona fide resident" to facilitate access for out-of-state veterans to Veterans Homes so that they might be closer to in-state relatives; remove a definition for the non-existent Texas Department of Aging and Disability Services; and changes a definition for "surviving spouse" to align with its federal definition pertaining to the U.S. Department of Veterans Affairs. In addition, the adopted amendments revise the definition of State Veterans Home to i) align with that in Section 164.002 of the Code, ii) incorporate licensure requirements in §176.8 to allow for that rule's repeal, and iii) to incorporate the State Veterans Homes Program requirements.

The adopted rule amendments to §176.5 update a reference to the Texas Department of Health and Human Services and add language to account for any State or federal agency that may require access to a Veterans Home's records and related documentation for auditing or review purposes and add language on certification and licensure requirements to account for any future Veterans Homes dedicated exclusively to Alzheimer's/dementia care.

The adopted rule amendments to §176.7 revise the admissions requirements to State Veterans Homes by removing a section outlining requirements that pertain to eligibility for per diem payments under 38 C.F.R. §51.50 - not requirements - and remove unnecessary language provided for in 38 C.F.R. § 51.120. The adopted amendments further remove requirements that spouses and surviving spouses are bona fide residents to align with the removal of the term, as addressed above. In addition they change the requirements for parent eligibility to reflect current Gold Star qualifications

The repeal of §176.2 is adopted because its provisions are provided for in Section 164.004 and 164.005 of the Code.

The repeal of §176.8 is adopted because its provisions are unnecessary. Chapter 164 of the Code and related federal regulations for the construction and acquisition of SVHs under 38 C.F.R. Part 59 indicate any would-be State Veterans Homes would be newly constructed or located in an existing structure. Also, that State Veterans Homes must adhere to any applicable laws, regulations, and requirements is evident. In addition, the Board's authority to adopt requirements related to State Veterans Homes is provided for in Section 164.005 of the Code. As stated above, provisions related to licensure requirements are relocated to the definition of State Veterans Home in §176.001.

The repeal of §176.10 is adopted because its provision is unnecessary: the Board sets its rules; it is the final authority on their interpretation and application.

The repeal of §176.11 is adopted because its provisions are obsolete. They were proposed in 1997 as a framework for procedures for awarding contracts related to SVHs. Current procurement and contracting laws in the Texas Government Code- to include, but not limited to those in Chapters 2155, 2156, and 2269- more adequately provide for these procedures; the Board follows these laws in its State Veterans Home-related procurements.

In addition, the title of this chapter is changed to "State Veterans Homes" to more accurately reflect its subject matter.

Also, throughout the chapter, references to the Board are made lower-case to align with their occurrences throughout Chapters 161, 162, and 164 of the Code, citations are updated, and editorial and grammatical changes are made to improve the rules' readability.

40 TAC §§176.1, 176.3 - 176.7, 176.9

STATUTORY AUTHORITY.

The amendments are adopted pursuant to Section 164.004 of the Texas Natural Resources Code, which allows the Board to adopt rules concerning the construction, acquisition, ownership, operation, maintenance, enlargement, improvement, furnishing, and equipping of State Veterans Homes.

The code affected by the adopted amendments is Chapter 164 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502267
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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40 TAC §§176.2, 176.8, 176.10, 176.11

The repeals are adopted pursuant to Section 164.004 of the Texas Natural Resources Code, which allows the Board to adopt rules concerning the construction, acquisition, ownership, operation, maintenance, enlargement, improvement, furnishing, and equipping of State Veterans Homes.

The code affected by the adopted repeals is Chapter 164 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502268
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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CHAPTER 177. VETERANS HOUSING ASSISTANCE PROGRAM AND VETERANS HOME IMPROVEMENT PROGRAM

The Texas Veterans Land Board ("Board") adopts the amendments to Texas Administrative Code, Title 40, Part 5, Chapter 177, §§177.1, 177.3 - 177.5, 177.7, 177.8, 177.10, 177.12 and 177.13, and the repeal of §177.14. The amended rules and repeal are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3234). The rules will not be republished.

No public comments were received on the adopted rule amendments and repeal.

The Board identified the need for the amendments and repeal during its review of this chapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved the adoption of these amendments and repeal.

The adopted rule amendments to §177.1 remove definitions for the Board, the veterans housing assistance fund, and the Veterans Housing Assistance Program ("Program") as these terms are already defined in Section 162.001 of the Texas Natural Resources Code, ("Code"); remove definitions for "bona fide resident" and "missing/missing in action" as the terms are not used in this chapter; and update the definition for "VA guaranty" to reflect the current entity guaranteeing mortgage loans for the U.S. Department of Veterans Affairs.

The adopted rule amendments to §177.3 change a reference to the State to align with how it is referred to in those chapters of the Code pertaining directly to the Board, i.e., Chapters 161, 162, and 164, and update a reference to the Texas Constitution.

The adopted rule amendment to §177.4 updates a reference to the Texas State Auditor's Office.

The adopted rule amendments to §177.5 update references to 40 Texas Administrative Code §175.2 and change a reference to the Veterans Land Program to reflect its usage in Chapter 161 of the Code.

The adopted rule amendments to §177.8 update references to Section 1201.003 of the Texas Occupations Code and relocate a provision requiring the Board to set loan amounts for home improvement loans from §177.14.

The repeal of §177.14 is adopted because its provisions on home loans are accounted for in Section 162.011 of the Texas Natural Resources Code.

In addition, the title of the chapter is changed to "Veterans Housing Assistance Program and Veterans Home Improvement Program" to reflect the types of loans to which the chapter pertains.

Also, throughout this chapter, references to Chapter 162 of the Code are updated, references to the Board are made lowercase to align with their occurrences throughout Chapters 161, 162, and 164 of the Code, and references to this chapter are changed from "title" to "chapter," as the former is generally used throughout the Texas Administrative Code. Furthermore, editorial changes are made throughout this chapter to correct grammar, remove superfluous or outdated language, and improve the rules' readability.

40 TAC §§177.1, 177.3 - 177.5, 177.7, 177.8, 177.10, 177.12, 177.13

STATUTORY AUTHORITY.

Section 162.003 of the Texas Natural Resources Code ("Code"), which requires the Board to adopt rules governing the administration of the veterans housing assistance fund and the Veterans' Housing Assistance Program, the creation of Program-related loans, the criteria for approving lending institutions, the use of insurance on these loans and homes financed under the Program, the verification of occupancy of such homes, and the terms and conditions of any contracts made with lending institutions related to such loans;

Section 162.011 of the Code, which allows the Board to determine the number of loans a veteran may receive through the Program;

Section 162.013 of the Code, which requires the Board to set interest rates for Program loans and to adopt rules regarding fees, charges, and interest rates charged by lending institutions on financing homes through the Program with money other than from the fund;

Section 162.016 of the Code, which allows the Board to create rules for the escalation of interest rates on loans and the acceleration of principal and interest on loans, or other appropriate remedies if a home secured by lien under the Program is transferred, leased, sold, or conveyed within three years of purchase; and

Section 162.017 of the Code requires the Board to adopt rules related to the foreclosure and resale of homes financed with a loan under the Program.

The Code affected by the adopted amendments is Chapter 162 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502269

Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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40 TAC §177.14

The repeal is adopted pursuant to Section 162.003 of the Texas Natural Resources Code, which requires the Board to adopt rules governing the administration of the veterans housing assistance fund and the Veterans' Housing Assistance Program ("Program"), the creation of Program-related loans, the criteria for approving lending institutions, the use of insurance on these loans and homes financed under the Program, the verification of occupancy of such homes, and the terms and conditions of any contracts made with lending institutions related to such loans.

The Code affected by the adopted repeal is Chapter 162 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502270
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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CHAPTER 178. TEXAS STATE VETERANS CEMETERIES

40 TAC §§178.1, 178.5, 178.6

The Texas Veterans Land Board ("Board") adopts the amendments to Texas Administrative Code, Title 40, Part 5, Chapter 178, §178.1., §178.5, and §178.6, and the repeals of §§178.2 - 178.4. The amended rules and repeals are adopted without change to the proposed text as published in the May 30, 2025, issue of the *Texas Register* (50 TexReg 3238). The amended rules and repeals will not be republished.

No public comments were received on the adopted rule amendments and repeals.

The Board identified the need for the amendments and repeals during its review of this chapter's rules, conducted pursuant to Section 2001.039 of the Texas Government Code. At its May 13, 2025 meeting, the Board unanimously approved these amendments and repeals.

The adopted rule amendments to §178.1 remove a definition for the Board because it is already defined in Section 164.002 of the Texas Natural Resources Code (Code), revise a definition for Veterans Cemeteries to align with Section 164.002 of the Code and to incorporate the Veterans Cemetery Grants Program ("Program") requirements, remove definitions for Chairman of the Board and the Veterans Cemetery Committee because the terms are not used in this chapter, update citations to rules for the Program in Title 38, Chapter 39 of the Code of Federal Regulations outlining eligible relatives for interment related to the Program, and update the definition of veteran to include members of the Space Force, as provided for in 38 U.S.C. §101(2).

The adopted rule amendment to §178.6 limits those interred in Texas State Veterans Cemeteries ("TSVCs") for whom the Board will seek plot allowance reimbursements to those meeting United States Department of Veteran Affairs ("USDVA") eligibility requirements.

The repeal of §178.2 is adopted because it outlines the Board's authorities related to TSVCs provided for in Chapter 164 of the Code.

The repeal of §178.3 is adopted because its provisions are similar to Section 164.004 of the Texas Natural Resources Code ("Code").

The repeal of §178.4 is adopted because its provisions are unnecessary. Chapter 164 of the Code and related federal regulations for TSVCs under 38 C.F.R. Part 39 indicate that any would-be TSVCs must be newly constructed. Also, that TSVCs must adhere to any applicable laws, regulations, and requirements pertaining to their establishment, operations, and funding is evident.

In addition, throughout the chapter, references to the Board are made lower-case to align with their occurrences throughout Chapters 161, 162, and 164 of the Code and editorial and grammatical changes are made to improve the rules' readability.

STATUTORY AUTHORITY.

The amendments are adopted pursuant to Section 164.004 of the Texas Natural Resources Code, which allows the Board to adopt rules concerning the construction, acquisition, ownership, operation, maintenance, enlargement, improvement, furnishing, and equipping Veterans Cemeteries.

The code affected by the proposed amendments is Chapter 164 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502271
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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40 TAC §§178.2 - 178.4

The repeals are adopted pursuant to Section 164.004 of the Texas Natural Resources Code, which allows the Board to adopt rules concerning the construction, acquisition, ownership, operation, maintenance, enlargement, improvement, furnishing, and equipping Veterans Cemeteries.

The code affected by the adopted repeals is Chapter 164 of the Texas Natural Resources Code.

The agency certifies that legal counsel has reviewed the adoption and found it to be a valid exercise of the agency's legal authority.

Filed with the Office of the Secretary of State on July 8, 2025.

TRD-202502272

Jennifer Jones
Chief Clerk and Deputy Land Commissioner
Texas Veterans Land Board
Effective date: July 28, 2025
Proposal publication date: May 30, 2025
For further information, please call: (512) 475-1859

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Texas

REVIEW OF AGENCY RULES

This section contains notices of state agency rule review as directed by the Texas Government Code, §2001.039. Included here are proposed rule review notices, which invite public comment to specified rules under review; and adopted rule review notices, which summarize public comment received as part of the review. The complete text of an agency's rule being reviewed is available in the *Texas Administrative Code* on the Texas Secretary of State's website.

For questions about the content and subject matter of rules, please contact the state agency that is reviewing the rules. Questions about the website and printed copies of these notices may be directed to the *Texas Register* office.

Proposed Rule Reviews

Texas Higher Education Coordinating Board

Title 19, Part 1

The Texas Higher Education Coordinating Board (Coordinating Board) proposes the review of Texas Administrative Code (TAC), Title 19, Part 1, Chapter 1, Subchapter P, Lower-Division Academic Course Guide Manual Advisory Committee, pursuant to Texas Government Code, §2001.039.

This review is conducted as required by law, which states that state agencies must assess whether the initial reasons for adopting a rule continue to exist every four years. As required by statute, the Coordinating Board will accept comments as to whether TAC, Chapter 1, Subchapter P, should continue.

Comments on the review may be submitted to Elizabeth Mayer, Assistant Commissioner for Academic and Health Affairs, P.O. Box 12788, Austin, Texas 78711-2788, or via email at AHAcomments@highered.texas.gov. Comments will be accepted for 30 days following publication of this notice in the *Texas Register.*

The text of the rule section being reviewed will not be published, but may be found in TAC, Title 19, Part 1, Chapter 1, Subchapter P.

TRD-202502386
Nichole Bunker-Henderson
General Counsel
Texas Higher Education Coordinating Board
Filed: July 11, 2025

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Texas Department of Motor Vehicles

Title 43, Part 10

The Texas Department of Motor Vehicles (department) will review and consider whether to readopt, readopt with amendments, or repeal 43 Texas Administrative Code, Chapter 206, Management; Chapter 211, Criminal History Offense and Action on License; and Chapter 217, Vehicle Titles and Registration, §217.27. This review is being conducted pursuant to Government Code, § 2001.039.

The board will assess whether the reasons for initially adopting these rules continue to exist and whether the rules should be repealed, readopted, or readopted with amendments.

If you want to comment on this rule review proposal, submit your written comments by 5:00 p.m. CDT on August 25, 2025. A request for a public hearing must be sent separately from your written comments. Send written comments or hearing requests by email to *rules@txdmv.gov* or by mail to Office of General Counsel, Texas Department of Motor Vehicles, 4000 Jackson Avenue, Austin, Texas 78731. If a hearing is held, the department will consider written comments and public testimony presented at the hearing.

Proposed changes to §217.27 and sections of Chapter 211 are published in the Proposed Rules section of this issue of the *Texas Register* and are open for a 30-day public comment period as required under the Administrative Procedures Act, Government Code § 2001.023. No changes are proposed for Chapter 206.

TRD-202502325
Laura Moriaty
General Counsel
Texas Department of Motor Vehicles
Filed: July 10, 2025

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Adopted Rule Reviews

Department of Savings and Mortgage Lending

Title 7, Part 4

The Department of Savings and Mortgage Lending (SML), on behalf of the Finance Commission of Texas (commission), has completed its review of the following chapters of 7 TAC Part 4:

Chapter 51, Department Administration (§§51.1 - 51.4, 51.100, 51.200, 51.300 - 51.304, 51.400 - 51.405, and 51.500 - 51.506).

The review was conducted in accordance with Government Code §2001.039. Notice of the review was published in the March 21, 2025, issue of the *Texas Register* (50 TexReg 2081). No comments were received in response to the notice.

The rules in 7 TAC Chapters 51 were adopted by the commission on behalf of SML.

As a result of the rule review conducted by SML, the commission determined that certain changes to the rules were appropriate. Those proposed rule changes were published in the May 9, 2025, issue of the *Texas Register* (50 TexReg 2735), and the adopted rule changes were published in the July 4, 2025, issue of the *Texas Register* (50 TexReg 3867).

The commission, after considering the results of the rule review conducted by SML, finds that the reasons for initially adopting the rules reviewed continue to exist and readopts 7 TAC Chapter 51.

TRD-202502398

Iain A. Berry
General Counsel
Department of Savings and Mortgage Lending
Filed: July 11, 2025

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Health and Human Services Commission

Title 26, Part 1

The Texas Health and Human Services Commission (HHSC) adopts the review of the chapter below in Title 26, Part 1, of the Texas Administrative Code (TAC):

Chapter 910, State Facility Business Operations

Notice of the review of this chapter was published in the June 6, 2025, issue of the *Texas Register* (50 TexReg 3485). HHSC received no comments concerning this chapter.

HHSC has reviewed Chapter 910 in accordance with Texas Government Code §2001.039, which requires state agencies to assess, every four years, whether the initial reasons for adopting a rule continue to exist.

The agency determined that the original reasons for adopting all rules in the chapter continue to exist and readopts Chapter 910. Any amendments, if applicable, to Chapter 910 identified by HHSC in the rule review will be proposed in a future issue of the *Texas Register*.

This concludes HHSC's review of 26 TAC Chapter 910 as required by Texas Government Code §2001.039.

TRD-202502439
Jessica Miller
Director, Rules Coordination Office
Health and Human Services Commission
Filed: July 11, 2025

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TABLES & GRAPHICS

Graphic images included in rules are published separately in this tables and graphics section. Graphic images are arranged in this section in the following order: Title Number, Part Number, Chapter Number and Section Number.

Graphic images are indicated in the text of the emergency, proposed, and adopted rules by the following tag: the word "Figure" followed by the TAC citation, rule number, and the appropriate subsection, paragraph, subparagraph, and so on.

Figure: 19 TAC §4.52(b)

APPLICABILITY CATEGORIES			
Category	**Student**	**Subject Area**	**Time Period**
Prior or Current Academic Coursework	Student has earned an associate or baccalaureate degree from an institution of higher education	All	No expiration
	Student transfers from a private or independent institution of higher education or an accredited out-of-state institution of higher education and has satisfactorily completed college-level coursework	The subject area in which the student has satisfactorily completed college-level coursework	No expiration
	Student is enrolled in a certificate program of one year or less at a public junior college, public technical institute, or public state college	All	Applicable while the student is enrolled in the certificate program of one year or less
	Student is enrolled in high school who is not a degree-seeking student as defined in 19 Texas Administrative Code §4.58(8) and 4.83(10)	All	Applicable while the student is enrolled in high school and classified as a non-degree-seeking student
Military Service	Student is serving on active duty as a member of the armed forces of the United States, the Texas National Guard, or as a member of a reserve component of the armed forces of the United States	All	Applicable while the student is serving on active duty
	Student was honorably discharged, retired, or released from active duty as a member of the armed forces of the United States or the Texas National Guard or service as a member of a reserve component of the armed forces of the United States	All	No expiration

Public Officers and Employees	Student is certified as an emergency medical technician under Chapter 773, Health and Safety Code and employed by a political subdivision.	All	No expiration
	Student is a fire protection personnel as defined in Section 419.021, Government Code.	All	No expiration
	Student is elected, appointed, or employed to serve as a peace officer described by Article 2A.001, Code of Criminal Procedure, or other law.	All	No expiration

Figure: 19 TAC §12.5(d)(4)

APPROVED ASSESSMENTS AND DOCUMENTATION FOR OPPORTUNITY HIGH SCHOOL DIPLOMA CORE PROGRAM COMPETENCIES

Assessment or Documentation	Use	Quantitative Reasoning Core Competency	MS	Communication Skills Core Competency	MS	Civics Core Competency	MS	Scientific Reasoning Core Competency	MS	Workplace Success Skills Core Competency	MS
Accuplacer	PLA Final	Arithmetic	230	Reading	233	–	–	–	–	–	–
ACT	PLA	Math	19	English	17	–	–	Science	22	–	–
ACT WorkKeys	PLA Final	Applied Math	86	Workplace Documents	81	–	–	–	–	National Career Readiness Certificate, Essential Skills	Applied Math 86 Workplace Documents 81 Graphic Literacy 75
CASAS (assessments)	PLA Final	Math	226	Reading	239	–	–	–	–	–	–
GED	PLA	Mathematical Reasoning	145	Reasoning through Language Arts	145	–	–	Science	145	–	–
SAT	PLA	Math	530	Reading, Writing	480	–	–	–	–	–	–
STAAR EOC (high school)	PLA	Algebra 1	Meets Grade Level	English I and II	Meets Grade Level	U.S. History	Meets Grade Level	Biology	Meets Grade Level	–	–
Test of Adult Basic Education	PLA Final	Mathematics	596	Reading	576	–	–	–	–	–	–
TSIA	PLA	Mathematics	350	Reading	351+4E	–	–	–	–	–	–
TSIA2	PLA Final	Mathematics	950	English Language Arts Reading	945+5E	–	–	–	–	–	–
U.S. Citizenship Exam	PLA Final	–	–	–	–	Civics content (61 questions)	60% Pass	–	–	–	–

APPROVED ASSESSMENTS AND DOCUMENTATION FOR OPPORTUNITY HIGH SCHOOL DIPLOMA CORE PROGRAM COMPETENCIES											
Assessment or Documentation	**Use**	**Quantitative Reasoning Core Competency**	**MS**	**Communication Skills Core Competency**	**MS**	**Civics Core Competency**	**MS**	**Scientific Reasoning Core Competency**	**MS**	**Workplace Success Skills Core Competency**	**MS**
High School Transcript, including Dual Credit	PLA	Algebra I, Geometry, or higher	Pass	English I, English II, or CTE Communications	Pass	U.S. Government	Pass	Biology	Pass	–	–
Postsecondary Transcript, credit bearing class completion	PLA	Applied Math or Algebra	Pass	English or CTE Communications	Pass	U.S. Government	Pass	Science	Pass	–	–
Military Service Credit as recommended by the American Council on Education	PLA	Algebra I or higher	Pass	English or English Language Arts	Pass	U.S. Government	Pass	Science or Biology	Pass	–	–
HiSet (out-of-state high school diploma equivalent)	PLA	Mathematics	8	Reading	8	–	–	Science	8	–	–
TXOHSD Quantitative Reasoning Skills Assessment 2025_v.1	PLA Final	Quantitative Reasoning	70	–	–	–	–	–	–	–	–
TXOHSD Quantitative Reasoning Skills Assessment 2025_v.2	PLA Final	Quantitative Reasoning	70	–	–	–	–	–	–	–	–

APPROVED ASSESSMENTS AND DOCUMENTATION FOR OPPORTUNITY HIGH SCHOOL DIPLOMA CORE PROGRAM COMPETENCIES											
Assessment or Documentation	**Use**	**Quantitative Reasoning Core Competency**	**MS**	**Communication Skills Core Competency**	**MS**	**Civics Core Competency**	**MS**	**Scientific Reasoning Core Competency**	**MS**	**Workplace Success Skills Core Competency**	**MS**
TXOHSD Quantitative Reasoning Skills Assessment 2025_v.3	PLA Final	Quantitative Reasoning	70	–	–	–	–	–	–	–	–
TXOHSD Communication Skills Assessment 2025_v.1	PLA Final	–	–	Communication Skills	70	–	–	–	–	–	–
TXOHSD Communication Skills Assessment 2025_v.2	PLA Final	–	–	Communication Skills	70	–	–	–	–	–	–
TXOHSD Civics Assessment 2025_v.1	PLA Final	–	–	–	–	Civics	70	–	–	–	–
TXOHSD Civics Assessment 2025_v.2	PLA Final	–	–	–	–	Civics	70	–	–	–	–
TXOHSD Civics Assessment 2025_v.3	PLA Final	–	–	–	–	Civics	70	–	–	–	–
TXOHSD Civics Assessment 2025_v.4	PLA Final	–	–	–	–	Civics	70	–	–	–	–

APPROVED ASSESSMENTS AND DOCUMENTATION FOR OPPORTUNITY HIGH SCHOOL DIPLOMA CORE PROGRAM COMPETENCIES											
Assessment or Documentation	**Use**	**Quantitative Reasoning Core Competency**	**MS**	**Communication Skills Core Competency**	**MS**	**Civics Core Competency**	**MS**	**Scientific Reasoning Core Competency**	**MS**	**Workplace Success Skills Core Competency**	**MS**
TXOHSD Scientific Reasoning Assessment 2025_v.1	PLA Final	–	–	–	–	–	–	Scientific Reasoning	70	–	–
TXOHSD Scientific Reasoning Assessment 2025_v.2	PLA Final	–	–	–	–	–	–	Scientific Reasoning	70	–	–
TXOHSD Scientific Reasoning Assessment 2025_v.3	PLA Final	–	–	–	–	–	–	Scientific Reasoning	70	–	–
TXOHSD Workplace Success Skills Assessment 2025_v.1	PLA Final	–	–	–	–	–	–	–	–	Workplace Success Skills	70
TXOHSD Workplace Success Skills Assessment 2025_v.2	PLA Final	–	–	–	–	–	–	–	–	Workplace Success Skills	70

Notes:

CTE – career and technical education
E – essay

Final – end of course assessment
MS – minimum score
PLA – prior learning assessment

Figure: 26 TAC §559.253(b)

SCOPE AND SEVERITY GRID FOR ADMINISTRATIVE PENALTIES			
	ISOLATED	**PATTERN**	**WIDESPREAD**
Immediate threat	**Substantial=NRTC**	**Substantial=NRTC**	**Substantial=NRTC**
	J	**K**	**L**
Initial	$400--$600	$450--$650	$500--$700
Repeat	$500--$700	$550--$750	$600--$800
Actual harm	**Substantial=NRTC**	**Substantial=NRTC**	**Substantial=NRTC**
	G	**H**	**I**
Initial	$250--$450	$300--$500	$350--$550
Repeat	$350--$550	$400--$600	$450--$650
No actual harm with a potential for more than minimal harm	**Non-Substantial=RTC**	**Non-Substantial=RTC**	**Substantial=NRTC**
	D	**E**	**F**
Initial	$100--$300	$150--$350	$200--$400
Repeat	$200--$400	$250--$450	$300--$500
No actual harm	**Non-Substantial=RTC**	**Non-Substantial=RTC**	**Non-Substantial=RTC**
	A	**B**	**C**
Initial	$0--$0	$0--$0	$0--$0
Repeat	$0--$0	$0--$0	$0--$0

Figure: 30 TAC §115.453(a)(1)(C)(i)

Table 1.		
Coating Category	**Air-Dried pounds of volatile organic compounds per gallon coating**	**Baked pounds of volatile organic compounds per gallon coating**
General Coating, One-Component	2.8	2.3
General Coating, Multi-Component	2.8	2.3
Camouflage Coating	3.5	3.0
Electric-Insulating Varnish Coating	3.5	3.0
Etching Filler Coating	3.5	3.0
Extreme High-Gloss Coating	3.5	3.0
Extreme Performance Coating	3.5	3.0
Heat-Resistant Coating	3.5	3.0
High Performance Architectural Coating	6.2	6.2
High Temperature Coating	3.5	3.5
Metallic Coating	3.5	3.0
Military Specification Coating	2.8	2.3
Mold-Seal Coating	3.5	3.0
Pan-Backing Coating	3.5	3.5
Prefabricated Architectural Coating, Multi-Component	3.5	2.3
Prefabricated Architectural Coating, One-Component	3.5	2.3
Pretreatment Coating	3.5	3.0
Repair and Touch-Up Coating	3.5	3.0
Silicone Release Coating	3.5	3.0
Solar-Absorbent Coating	3.5	3.0

Vacuum-Metalizing Coating	3.5	3.0
Drum Coating, New, Exterior	2.8	2.8
Drum Coating, New, Interior	3.5	3.5
Drum Coating, Reconditioned, Exterior	3.5	3.0
Drum Coating, Reconditioned, Interior	4.2	4.2

Table 2.		
Coating Category	**Air-Dried pounds of volatile organic compounds per gallon solids**	**Baked pounds of volatile organic compounds per gallon solids**
General Coating, One-Component	4.52	3.35
General Coating, Multi-Component	4.52	3.35
Camouflage Coating	6.67	5.06
Electric-Insulating Varnish Coating	6.67	5.06
Etching Filler Coating	6.67	5.06
Extreme High-Gloss Coating	6.67	5.06
Extreme Performance Coating	6.67	5.06
Heat-Resistant Coating	6.67	5.06
High Performance Architectural Coating	38.0	38.0
High Temperature Coating	6.67	6.67
Metallic Coating	6.67	5.06
Military Specification Coating	4.52	3.35
Mold-Seal Coating	6.67	5.06
Pan-Backing Coating	6.67	6.67
Prefabricated Architectural Coating, Multi-Component	6.67	3.35

Prefabricated Architectural Coating, One-Component	6.67	3.35
Pretreatment Coating	6.67	5.06
Repair and Touch-up Coating	6.67	5.06
Silicone Release Coating	6.67	5.06
Solar-Absorbent Coating	6.67	5.06
Vacuum-Metalizing Coating	6.67	5.06
Drum Coating, New, Exterior	4.52	4.52
Drum Coating, New, Interior	6.67	6.67
Drum Coating, Reconditioned, Exterior	6.67	5.06
Drum Coating, Reconditioned, Interior	9.78	9.78

Figure: 30 TAC §115.453(a)(1)(C)(ii)

Coating Category	Air-Dried pounds of volatile organic compounds per gallon coating	Baked pounds of volatile organic compounds per gallon coating
General Coating, One Component	2.3	2.3
General Coating, Multi-Component	2.8	2.3
Camouflage Coating	3.5	3.0
Electric-Insulating Varnish Coating	3.5	3.0
Etching Filler Coating	3.5	3.0
Extreme High-Gloss Coating	2.8	3.0
Extreme Performance Coating	3.5	3.0
Heat-Resistant Coating	3.5	3.0
High Performance Architectural Coating	3.5	3.5
High Temperature Coating	3.5	3.5
Metallic Coating	3.5	3.0
Military Specification Coating	2.8	2.3
Mold-Seal Coating	3.5	3.0
Pan-Backing Coating	3.5	3.5
Prefabricated Architectural Coating, Multi-Component	2.8	2.3
Prefabricated Architectural Coating, One-Component	2.3	2.3
Pretreatment Coating	3.5	3.0
Repair and Touch-Up Coating	3.5	3.0
Silicone Release Coating	3.5	3.0
Solar-Absorbent Coating	3.5	3.0
Vacuum-Metalizing Coating	3.5	3.0
Drum Coating, New, Exterior	2.8	2.8
Drum Coating, New, Interior	3.5	3.5
Drum Coating, Reconditioned, Exterior	3.5	3.0
Drum Coating, Reconditioned, Interior	4.2	4.2

Figure: 30 TAC §115.453(a)(5)

[Figure: 30 TAC §115.453(a)(5)]

Table 1.

Coating Category	Limit Grams of VOC per liter coating, less water and less exempt compounds
Bond Breakers	350
Building Envelope Coatings	50
Concrete-Curing Compounds	
Concrete-Curing Compounds for Roadways and Bridges	350
Concrete-Curing Compounds, Other than for Roadways and Bridges	100
Concrete Surface Retarder	50
Default Coatings	50
Driveway Sealer	50
Dry-Fog Coatings	50
Faux Finishing Coatings	
Clear Topcoat	100
Decorative Coatings	350
Glazes	350
Japans	350
Trowel Applied Coatings	50
Fire-Resistive Coatings	150
Flat Coatings	50
Floor Coatings	50
Form Release Compound	100
Graphic Arts (Sign) Coatings	200
Magnesite Cement Coatings	450
Mastic Coatings	100
Metallic Pigmented Coatings	150
Multi-Color Coatings	250

Nonflat Coatings	50
Pre-Treatment Wash Primers	420
Primers, Sealers, and Undercoaters	100
Reactive Penetrating Sealers	350
Recycled Coatings	150
Roof Coatings	
Roof Coatings, Other than Aluminum	50
Roof Coatings, Aluminum	100
Roof Primers, Bituminous	350
Rust Preventative Coatings	100
Sacrificial Anti-Graffiti Coatings	50
Shellacs	
Clear	730
Pigmented	550
Specialty Primers	100
Stains	
Stains, Other than Interior	100
Stains, Interior	250
Stone Consolidants	450
Swimming Pool Coatings	
Repair	340
Other	340
Tile and Stone Sealers	100
Tub and Tile Refinishing Coatings	420
Waterproofing Sealers	100
Waterproofing Concrete/Masonry Sealers	100
Wood Coatings	
Varnish	275
Sanding Sealers	275
Lacquer	275
Other	275
Wood Conditioners	100
Wood Preservatives	
Below-Ground	350
Other	350

Table 2.

Coating Category	Limit Grams of VOC Per Liter of Material
Low-Solids Coating	120

Table 3.

Coating Category	Limit Grams of VOC Per Liter of Colorant Less Water and Less Exempt Compounds
Colorant added to Architectural Coatings, excluding IM Coatings	50

[Figure: 30 TAC §115.453(a)(5)]

Figure: 30 TAC §115.453(a)(6)

$$E = \frac{(VOC - S)}{VOC}$$

Where:

E = The required overall control efficiency, decimal fraction.

VOC = The volatile organic compounds (VOC) content of the coatings used on the coating line expressed on a solids basis in units consistent with the VOC emission limits provided in paragraphs (1) or (4) of this subsection. The owner or operator may choose to use either a daily weighted average or the maximum VOC content.

S = The applicable VOC emission limit in paragraphs (1) or (4) of this subsection expressed on a solids basis in units consistent with the units expressed in the VOC variable above.

Figure: 30 TAC §115.463(f)

Solvent Cleaning Category	VOC Content Limit (pounds VOC per gallon)	VOC Content Limit (grams VOC per liter)
(A) Product Cleaning During Manufacturing Process or Surface Preparations for Coating, Adhesives, or Ink Application		
(i) General	0.21	25
(ii) Electrical Components and Electronic Components	0.83	100
(iii) Medical Devices and Pharmaceuticals	6.7	800
(B) Repair and Maintenance Cleaning		
(i) General	0.21	25
(ii) Electrical and Electronic Components	0.83	100
(iii) Medical Devices and Pharmaceuticals		
(A) Tools, Equipment, Machinery	6.7	800
(B) Medical or Pharmaceutical Work Surfaces	5.0	600
(C) Cleaning of Coatings or Adhesives Application Equipment	0.21	25
(D) Cleaning of Ink Application Equipment		
(i) General	0.21	25
(ii) Flexographic Printing	0.21	25
(iii) Gravure Printing		
(A) Publications	0.83	100
(B) Packaging	0.21	25
(iv) Lithographic (Offset) or Letter Press Printing		
(A) Roller Wash, Blanket Wash, and On-press Components	0.83	100
(B) Removable Press Components	0.21	25
(v) Screen Printing	0.83	100

Solvent Cleaning Category	VOC Content Limit (pounds VOC per gallon)	VOC Content Limit (grams VOC per liter)
(vi) Ultraviolet Ink/Electron Beam Ink Application Equipment (except screen printing)	0.83	100
(vii) Specialty Flexographic Printing	0.83	100
(E) Cleaning of Polyester Resin Application Equipment	0.21	25

IN ADDITION

The *Texas Register* is required by statute to publish certain documents, including applications to purchase control of state banks, notices of rate ceilings issued by the Office of Consumer Credit Commissioner, and consultant proposal requests and awards. State agencies also may publish other notices of general interest as space permits.

Comptroller of Public Accounts

Correction of Error

The Comptroller of Public Accounts proposed amendments to 34 TAC §3.722 in the July 4, 2025, issue of the *Texas Register* (50 TexReg 3856). Due to an error by the Texas Register, extraneous information was included in the preamble portion of the rulemaking. The preamble should have read as follows:

The Comptroller of Public Accounts proposes amendments to §3.722, concerning the sexually oriented business fee. The comptroller amends this section to implement the decision in *Tex. Entm't Ass'n, Inc. v. Hegar*, 10 F.4th 495 (5th Cir. 2021) and to implement House Bill 3345, 88th Legislature, 2023.

The comptroller amends the definition of clothing in subsection (a)(1), to remove the provision that was deemed unconstitutional in the *Texas Entertainment Association, Inc.* case.

The comptroller amends subsection (d)(1) and (2), and increases the fee imposed on a sexually oriented business to $10 for each entry by each customer admitted to the business, as provided in House Bill 3345.

The comptroller also replaces the term "return" with "report" for consistent usage throughout the section.

Tetyana Melnyk, Director of Revenue Estimating Division, has determined that during the first five years that the proposed amended rule is in effect, the rule: will not create or eliminate a government program; will not require the creation or elimination of employee positions; will not require an increase or decrease in future legislative appropriations to the agency; will not require an increase or decrease in fees paid to the agency; will not increase or decrease the number of individuals subject to the rule's applicability; and will not positively or adversely affect this state's economy.

Ms. Melnyk also has determined that the proposed amended rule would have no significant fiscal impact on the state government, units of local government, or individuals. The proposed amended rule would benefit the public by conforming the rule to current statute and comptroller practice while removing language found to be unconstitutional. There would be no significant economic cost to the public. The proposed amended rule would have no significant fiscal impact on small businesses or rural communities.

You may submit comments on the proposal to Jenny Burleson, Director, Tax Policy Division, P.O. Box 13528 Austin, Texas 78711 or to the email address: tp.rule.comments@cpa.texas.gov. The comptroller must receive your comments no later than 30 days from the date of publication of the proposal in the *Texas Register*.

The comptroller proposes the amendments under Tax Code, §111.002 (Comptroller's Rules; Compliance; Forfeiture) and §111.0022 (Application to Other Laws Administered by Comptroller) which provide the comptroller with authority to prescribe, adopt, and enforce rules relating to the administration and enforcement provisions of Tax Code, Title 2, and taxes, fees, or other charges which the comptroller administers under other law.

The amendments to this section implement Business and Commerce Code, §102.051 (Definitions).

TRD-202502537

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Office of Consumer Credit Commissioner

Notice of Rate Ceilings

The Consumer Credit Commissioner of Texas has ascertained the following rate ceilings by use of the formulas and methods described in §303.003, §303.009, and §304.003 Texas Finance Code.

The weekly ceiling as prescribed by §303.003 and §303.009 for the period of 07/21/25- 07/27/25 is 18.00% for consumer[1] credit.

The weekly ceiling as prescribed by §303.003 and §303.009 for the period of 07/21/25- 07/27/25 is 18.00% for commercial[2] credit.

The postjudgment interest rate as prescribed by §304.003 for the period of 08/01/25 - 08/31/25 is 7.50%.

[1] Credit for personal, family, or household use.

[2] Credit for business, commercial, investment, or other similar purpose.

TRD-202502520
Leslie L. Pettijohn
Commissioner
Office of Consumer Credit Commissioner
Filed: July 15, 2025

♦ ♦ ♦

Credit Union Department

Application for a Merger or Consolidation

Notice is given that the following application has been filed with the Credit Union Department (Department) and is under consideration:

An application was received from IBEW Local #681 Credit Union (Wichita Falls) seeking approval to merge with Texoma Community Credit Union (Wichita Falls), with Texoma Community Credit Union being the surviving credit union.

Comments or a request for a meeting by any interested party relating to an application must be submitted in writing within 30 days from the date of this publication. Any written comments must provide all information that the interested party wishes the Department to consider in evaluating the application. All information received will be weighed during consideration of the merits of an application. Comments or a request for a meeting should be addressed to the Credit Union Department, 914 East Anderson Lane, Austin, Texas 78752-1699.

TRD-202502527
Michael S. Riepen
Commissioner
Credit Union Department
Filed: July 16, 2025

♦ ♦ ♦

Application to Expand Field of Membership

Notice is given that the following applications have been filed with the Credit Union Department (Department) and are under consideration.

An application was received from InTouch Credit Union #1, Plano, Texas, to expand its field of membership. The proposal would permit members of the Cornerstone Friends of the Foundation, to be eligible for membership in the credit union.

An application was received from InTouch Credit Union #2, Plano, Texas, to expand its field of membership. The proposal would permit persons who are National Association of Collegiate Esports (NACE) Student-Athletes, to be eligible for membership in the credit union.

Comments or a request for a meeting by any interested party relating to an application must be submitted in writing within 30 days of the date of this publication. Credit unions that wish to comment on any application must also complete a Notice of Protest form. The form may be obtained by contacting the Department at (512) 837-9236 or downloading the form at http://www.cud.texas.gov/page/bylaw-charter-applications. Any written comments must provide all the information that the interested party wishes the Department to consider in evaluating the application. All information received will be weighed during consideration of the merits of an application. Comments or a request for a meeting should be addressed to the Credit Union Department, 914 East Anderson Lane, Austin, Texas 78752-1699.

TRD-202502528
Michael S. Riepen
Commissioner
Credit Union Department
Filed: July 16, 2025

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Notice of Final Action Taken

In accordance with the provisions of 7 TAC §91.103, the Credit Union Department provides notice of the final action taken on the following applications:

Field of Membership - Approved

First Community CU - See *Texas Register* dated on April 25, 2025.

Texell CU - See *Texas Register* dated on May 30, 2025.

Articles of Incorporation - Approved

An application was received from Angelina Federal Employees Credit Union (Lufkin) to amend its Articles of Incorporation relating to name change to Aspire Credit Union.

See *Texas Register* dated on May 30, 2025.

TRD-202502526
Michael S. Riepen
Commissioner
Credit Union Department
Filed: July 16, 2025

♦ ♦ ♦

Texas Commission on Environmental Quality

Agreed Orders

The Texas Commission on Environmental Quality (TCEQ, agency, or commission) staff is providing an opportunity for written public comment on the listed Agreed Orders (AOs) in accordance with Texas Water Code (TWC), §7.075. TWC, §7.075, requires that before the commission may approve the AOs, the commission shall allow the public an opportunity to submit written comments on the proposed AOs. TWC, §7.075, requires that notice of the proposed orders and the opportunity to comment must be published in the *Texas Register* no later than the 30th day before the date on which the public comment period closes, which in this case is **August 25, 2025.** TWC, §7.075, also requires that the commission promptly consider any written comments received and that the commission may withdraw or withhold approval of an AO if a comment discloses facts or considerations that indicate that consent is inappropriate, improper, inadequate, or inconsistent with the requirements of the statutes and rules within the commission's jurisdiction or the commission's orders and permits issued in accordance with the commission's regulatory authority. Additional notice of changes to a proposed AO is not required to be published if those changes are made in response to written comments.

A copy of each proposed AO is available for public inspection at both the commission's central office, located at 12100 Park 35 Circle, Building C, 1st Floor, Austin, Texas 78753, (512) 239-2545 and at the applicable regional office listed as follows. Written comments about an AO should be sent to the enforcement coordinator designated for each AO at the commission's central office at P.O. Box 13087, Austin, Texas 78711-3087 and must be received by 5:00 p.m. on **August 25, 2025.** Written comments may also be sent by facsimile machine to the enforcement coordinator at (512) 239-2550. The commission's enforcement coordinators are available to discuss the AOs and/or the comment procedure at the listed phone numbers; however, TWC, §7.075, provides that comments on the AOs shall be submitted to the commission in writing.

(1) COMPANY: 1693 Distillery, LLC and PEDERNALES DEVELOPMENT PARTNERS, LLC; DOCKET NUMBER: 2025-0613-PWS-E; IDENTIFIER: RN112026323; LOCATION: Fredericksburg, Gillespie County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.39(e)(1) and (h)(1) and Texas Health and Safety Code, §341.035(a), by failing to submit plans and specifications to the executive director (ED) for review and approval prior to the construction of a new public water supply; 30 TAC §290.41(c)(3)(A), by failing to submit well completion data for review and approval prior to placing the facility's public drinking water well into service; 30 TAC §290.42(b)(1) and (e)(3), by failing to provide disinfection facilities for the groundwater supply for the purpose of microbiological control and distribution protection; and 30 TAC §290.46(q)(1), by failing to provide a copy of the boil water notice (BWN) to the ED within 24 hours after issuance of the BWN and a signed Certificate of Delivery to the ED within ten days after issuance of the BWN; PENALTY: $5,425; ENFORCEMENT COORDINATOR: Katherine Argueta, (512) 239-4131; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(2) COMPANY: Air Liquide Large Industries U.S. LP; DOCKET NUMBER: 2022-1085-AIR-E; IDENTIFIER: RN100215334; LOCATION: Freeport, Brazoria County; TYPE OF FACILITY: chemical manufacturer plant; RULES VIOLATED: 30 TAC §§101.20(3), 116.115(b)(2) and (c), and 122.143(4), New Source Review (NSR) Permit Numbers 32274, PSDTX995M1, and N042, Special Conditions (SC) Number 17.F, Federal Operating Permit (FOP) Number O2391, General Terms and Conditions (GTC) and Special Terms and Conditions (STC) Number 12, and Texas Health and Safety Code (THSC), §382.085(b), by failing to prevent the loss of valid data from a continuous emissions monitoring system (CEMS) due to periods of monitor break down, out-of-control operations, repair, maintenance, or calibration that exceeds 5.0% of the time that the heater operated over the previous rolling 12-month period; 30 TAC §§101.20(3), 116.115(b)(2)(F) and (c), and 122.143(4), NSR Permit Numbers 32274, PSDTX995M1, and N042, SC Number 1, FOP Number O2391, GTC and STC Number 12, and THSC, §382.085(b),

by failing to comply with the maximum allowable emissions rates (MAERs); 30 TAC §§101.20(3), 116.115(c), and 122.143(4), NSR Permit Numbers 32274, PSDTX995M1, and N042, SC Number 12.C., FOP Number O12391, GTC and STC Number 12, and THSC, §382.085(b), by failing to comply with the concentration limit; 30 TAC §§101.20(3), 116.115(c), and 122.143(4), NSR Permit Numbers 32274, PSDTX995M1, and N042, SC Number 17.F, FOP Number O2391, GTC and STC Number 12, and THSC, §382.085(b), by failing to prevent the loss of valid data from a CEMS due to periods of monitor break down, out-of-control operations, repair, maintenance, or calibration that exceeds 5.0% of the time that the heater operated over the previous rolling 12-month period; and 30 TAC §122.143(4) and §122.145(2)(A), FOP Number O2391, GTC, and THSC, §382.085(b), by failing to report all instances of deviations; PENALTY: $102,055; ENFORCEMENT COORDINATOR: Yuliya Dunaway, (210) 403-4077; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(3) COMPANY: Air Liquide Large Industries U.S. LP; DOCKET NUMBER: 2024-0476-AIR-E; IDENTIFIER: RN100233998; LOCATION: Pasadena, Harris County; TYPE OF FACILITY: cogeneration plant; RULES VIOLATED: 30 TAC §§101.20(3), 116.115(c), and 122.143(4), New Source Review Permit Numbers 9346, 73110 and PSDTX612M2, Special Conditions Numbers 3 and 8.D, Federal Operating Permit (FOP) Number O1735, General Terms and Conditions (GTC) and Special Terms and Conditions Number 8, and Texas Health and Safety Code (THSC), §382.085(b), by failing to comply with the concentration limits; and 30 TAC §122.143 and §122.145(2)(A), FOP Number O1735, GTC, and THSC, §382.085(b), by failing to report all instances of deviations; PENALTY: $66,102; ENFORCEMENT COORDINATOR: Caleb Martin, (512) 239-2091; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(4) COMPANY: Aqua Texas, Incorporated; DOCKET NUMBER: 2024-1922-PWS-E; IDENTIFIER: RN101245744; LOCATION: Houston, Harris County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.46(f)(2) and (3)(B)(v), by failing to maintain water works operation and maintenance records and make them readily available for review by the Executive Director upon request; PENALTY: $50; ENFORCEMENT COORDINATOR: Wyatt Throm, (512) 239-1120; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(5) COMPANY: Aqua Texas, Incorporated; DOCKET NUMBER: 2025-0603-PWS-E; IDENTIFIER: RN101234946; LOCATION: Alvin, Brazoria County; TYPE OF FACILITY: public water supply; RULE VIOLATED: 30 TAC §290.42(f)(1)(E)(ii), by failing to provide containment facilities for all liquid chemical storage tanks; PENALTY: $675; ENFORCEMENT COORDINATOR: Ronica Rodriguez Scott, (512) 239-2510; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(6) COMPANY: CANADIAN OIL and GAS COMPANY, L.C.; DOCKET NUMBER: 2025-0092-PWS-E; IDENTIFIER: RN111972501; LOCATION: Canadian, Hemphill County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.46(n)(1), by failing to maintain at the public water system accurate and up-to-date detailed as-built plans or record drawings and specifications for each treatment plant, pump station, and storage tank until the facility is decommissioned; and 30 TAC §290.46(n)(3), by failing to keep on file copies of well completion data as defined in 30 TAC §290.41(c)(3)(A) for as long as the well remains in service; PENALTY: $950; ENFORCEMENT COORDINATOR: Savannah Jackson, (512) 239-4306; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(7) COMPANY: City of Childress; DOCKET NUMBER: 2023-0867-MWD-E; IDENTIFIER: RN101612604; LOCATION: Childress, Childress County; TYPE OF FACILITY: wastewater treatment facility; RULES VIOLATED: 30 TAC §305.125(1), TWC, §26.121(a)(1), and Texas Pollutant Discharge Elimination System (TPDES) Permit Number WQ0010076005, Interim Effluent Limitations and Monitoring Requirements Number 1 and 6, by failing to comply with permitted effluent limitations; 30 TAC §305.125(1) and (18) and TPDES Permit Number WQ0010076005, Other Requirements Number 9, by failing to submit a complete quarterly progress report which shall be submitted no later than 14 days following each schedule date; and 30 TAC §305.125(1) and (17) and §319.7(d) and TPDES Permit Number WQ0010076005, Monitoring and Reporting Requirements Number 1, by failing to timely submit monitoring results at intervals specified in the permit; PENALTY: $114,675; ENFORCEMENT COORDINATOR: Harley Hobson, (512) 239-1337; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(8) COMPANY: City of Cuney; DOCKET NUMBER: 2025-0199-PWS-E; IDENTIFIER: RN101282804; LOCATION: Cuney, Cherokee County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.39(o)(3) and §290.45(h)(1), by failing to adopt and submit to the Executive Director a complete Emergency Preparedness Plan that demonstrates the facility's ability to provide emergency operations; and 30 TAC §290.51(a)(6) and TWC, §5.702, by failing to pay annual Public Health Service fees and/or associated late fees for TCEQ Financial Administration Account Number 90370051 for Fiscal Year 2025; PENALTY: $51; ENFORCEMENT COORDINATOR: Mason DeMasi, (210) 657-8425; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(9) COMPANY: City of Gordon; DOCKET NUMBER: 2025-0129-PWS-E; IDENTIFIER: RN101406957; LOCATION: Gordon, Palo Pinto County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.42(d)(2)(E), by failing to provide an air gap for the filter-to-waste connection with a height of at least twice the diameter of the water supply outlet above the ground surface; 30 TAC §290.45(b)(2)(B) and (e)(2), by failing to provide a treatment plant capacity of 0.6 gallons per minute per connection plus the maximum amount of water obligated or pledged under all wholesale contracts; 30 TAC §290.46(d)(2)(B) and §290.110(b)(4) and Texas Health and Safety Code, §341.0315(c), by failing to maintain a disinfectant residual of at least 0.5 milligrams per liter of total chlorine throughout the distribution system at all times; 30 TAC §290.46(m), by failing to initiate maintenance and housekeeping practices to ensure the good working condition and general appearance of the system's facilities and equipment; 30 TAC §290.46(m)(1)(B), by failing to inspect the interior of the facility's pressure tank at least once every five years; 30 TAC §290.110(c)(4)(C), by failing to monitor the disinfectant residual at representative locations throughout the distribution system at least once daily; and 30 TAC §290.110(c)(5)(D)(i) and (ii), by failing to conduct chloramine effectiveness sampling to ensure that monochloramine is the prevailing chloramine species and that nitrification is controlled; PENALTY: $2,865; ENFORCEMENT COORDINATOR: Mason DeMasi, (210) 657-8425; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(10) COMPANY: City of Huntington; DOCKET NUMBER: 2021-1169-MWD-E; IDENTIFIER: RN102184355; LOCATION: Huntington, Angelina County; TYPE OF FACILITY: wastewater treatment facility; RULES VIOLATED: 30 TAC §305.125(1), TWC, §26.121(a)(1), Texas Pollutant Discharge Elimination System (TPDES) Permit Number WQ0010191001, Permit Conditions Number 2.g, and TCEQ Agreed Order Docket Number 2018-1034-MWD-E, Ordering Provision Numbers 3.d.iv and 3.f, by failing to prevent

the unauthorized discharge of wastewater from the collection system into or adjacent to water in the state; 30 TAC §305.125(1) and (4), TWC, §26.121(a)(1), TPDES Permit Number WQ0010191001, Permit Conditions Number 2.d and Operational Requirements Number 1, and TCEQ Agreed Order Docket Number 2018-1034-MWD-E, Ordering Provision Numbers 3.d.viii and 3.f, by failing to take all reasonable steps to minimize or prevent any discharge or sludge use or disposal or other permit violation which has a reasonable likelihood of adversely affecting human health or the environment; 30 TAC §305.125(1) and (5), TPDES Permit Number WQ0010191001, Operational Requirements Number 1, and TPDES Order Docket Number 2018-1034-MWD-E, Ordering Provision Number 3.d.ii, by failing to ensure that all systems of collection, treatment, and disposal are properly operated and maintained; 30 TAC §§305.125(1) and (5), 317.3(b)(4) and (e)(5), TPDES Permit Number WQ0010191001, Operational Requirements Numbers 1 and 4, and TCEQ Agreed Order Docket Number 2018-1034-MWD-E, Ordering Provision Numbers 3.d.iii, 3.d.v, 3.d.x, 3.d.xi, and 3.d.xiii, by failing to ensure that all systems of collection, treatment, and disposal are properly operated and maintained; 30 TAC §305.125(1) and (9)(A), TPDES Permit Number WQ0010191001, Monitoring and Reporting Requirements Number 7(c), and TCEQ Agreed Order Docket Number 2018-1034-MWD-E, Ordering Provision Number 3.a.i, by failing to report any effluent violation which deviates from the permitted effluent limitations by more than 40% in writing to the TCEQ Beaumont Regional Office and the Enforcement Division within five working days of becoming aware of the non-compliance; 30 TAC §305.125(1) and (17), TPDES Permit Number WQ0010191001, Sludge Provisions, and TCEQ Agreed Order Docket Number 2018-1034-MWD-E, Ordering Provision Numbers 3.a.ii and 3.d.vi, by failing to submit the annual sludge reports to the TCEQ Beaumont Regional Office and the Enforcement Division by September 30 of each year; and 30 TAC §305.125(1) and §317.7(i) and TPDES Permit Number WQ0010191001, Operational Requirements Number 1, by failing to provide atmospheric vacuum breakers on all potable water washdown hoses; PENALTY: $227,500; SUPPLEMENTAL ENVIRONMENTAL PROJECT OFFSET AMOUNT: $227,500; ENFORCEMENT COORDINATOR: Harley Hobson, (512) 239-1337; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(11) COMPANY: City of Lone Oak; DOCKET NUMBER: 2025-0047-PWS-E; IDENTIFIER: RN101459766; LOCATION: Lone Oak, Hunt County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.46(f)(2) and (3)(A)(iv) and (E)(iv), by failing to maintain water works operation and maintenance records and make them readily available for review by the Executive Director upon request; PENALTY: $52; ENFORCEMENT COORDINATOR: Hilda Iyasele, (512) 239-5280; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(12) COMPANY: City of Prairie View; DOCKET NUMBER: 2025-0243-PWS-E; IDENTIFIER: RN101390029; LOCATION: Prairie View, Waller County; TYPE OF FACILITY: public water supply; RULE VIOLATED: 30 TAC §290.41(c)(1)(F), by failing to obtain a sanitary control easement covering land within 150 feet of the facility's Well Numbers 1 and 2; PENALTY: $700; ENFORCEMENT COORDINATOR: Rachel Frey, (512) 239-4330; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(13) COMPANY: Gerard R. Harris and Elizabeth Harris; DOCKET NUMBER: 2024-1865-OSS-E; IDENTIFIER: RN111341988; LOCATION: Midlothian, Ellis County; TYPE OF FACILITY: on-site sewage disposal facility (OSSF); RULES VIOLATED: 30 TAC §§285.31(d), 285.33(d)(2)(E), and 285.91(10), by failing to maintain the minimum required disposal area and separation requirements for an OSSF using surface application disposal; PENALTY: $225; ENFORCEMENT COORDINATOR: Harley Hobson, (512) 239-1337; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(14) COMPANY: Great Western Drilling Ltd.; DOCKET NUMBER: 2023-1453-AIR-E; IDENTIFIER: RN109877605; LOCATION: Levelland, Hockley County; TYPE OF FACILITY: tank battery; RULES VIOLATED: 30 TAC §116.110(a) and Texas Health and Safety Code, §382.0518(a) and §382.085(b), by failing to obtain authorization prior to constructing or modifying a source of air contaminants; PENALTY: $3,750; ENFORCEMENT COORDINATOR: Michael Wilkins, (325) 698-6134; REGIONAL OFFICE: 1977 Industrial Boulevard, Abilene, Texas 79602-7833, (325) 698-9674.

(15) COMPANY: Hog Creek Water Supply Corporation; DOCKET NUMBER: 2025-0175-PWS-E; IDENTIFIER: RN101459295; LOCATION: Valley Mills, Mclennan County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.39(o)(3) and §290.45(h)(1), by failing to adopt and submit to the Executive Director a complete Emergency Preparedness Plan that demonstrates the facility's ability to provide emergency operations; PENALTY: $127; ENFORCEMENT COORDINATOR: Hilda Iyasele, (512) 239-5280; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(16) COMPANY: INEOS OLIGOMERS USA LLC; DOCKET NUMBER: 2022-0103-AIR-E; IDENTIFIER: RN108783614; LOCATION: Alvin, Brazoria County; TYPE OF FACILITY: chemical manufacturing plant; RULES VIOLATED: 30 TAC §116.115(b)(2)(F) and (c) and §122.143(4), New Source Review (NSR) Permit Numbers 136130 and N250, Special Conditions (SC) Numbers 1, 7.A, 7.B, and 7.C(1) and (2), Federal Operating Permit (FOP) Number O4123, General Terms and Conditions (GTC) and Special Terms and Conditions (STC) Number 13, and Texas Health and Safety Code (THSC), §382.085(b), by failing to comply with the maximum allowable emissions rates, concentration limits, and emissions limits; 30 TAC §116.115(c) and §122.143(4), NSR Permit Numbers 136130 and N250, SC Number 1, FOP Number O4123, GTC and STC Number 13, and THSC, §382.085(b), by failing to prevent unauthorized emissions; 30 TAC §116.115(c) and §122.143(4), NSR Permit Numbers 136130 and N250, SC Numbers 7.A and 7.C(1) and (2), FOP O4123, GTC and STC Number 13, and THSC, §382.085(b), by failing to comply with the concentration limit and emissions limits; 30 TAC §116.115(c) and §122.143(4), NSR Permit Number 136130 and N250, SC Number 18.A, FOP Number O4123, GTC and STC Number 13, and THSC, §382.085(b), by failing to comply with the minimum destruction/removal efficiency for the thermal oxidizer; and 30 TAC §122.143(4) and §122.145(2)(A), FOP Number O4123, GTC, and THSC, §382.085(b), by failing to report all instances of deviations; PENALTY: $380,600; ENFORCEMENT COORDINATOR: Mackenzie Mehlmann, (512) 239-2572; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(17) COMPANY: INEOS OLIGOMERS USA LLC; DOCKET NUMBER: 2024-1433-AIR-E; IDENTIFIER: RN108783614; LOCATION: Alvin, Brazoria County; TYPE OF FACILITY: chemical manufacturing plant; RULES VIOLATED: 30 TAC §116.115(c) and §122.143(4), New Source Review Permit Numbers 136130 and N250M2, Special Conditions Number 1, Federal Operating Permit Number O4123, General Terms and Conditions and Special Terms and Conditions Number 13, and Texas Health and Safety Code, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: $10,575; ENFORCEMENT COORDINATOR: Yuliya Dunaway, (210) 403-4077; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(18) COMPANY: JGE Gas Solutions, LP; DOCKET NUMBER: 2023-0434-AIR-E; IDENTIFIER: RN100237502; LOCATION:

Longview, Gregg County; TYPE OF FACILITY: natural gas plant; RULES VIOLATED: 30 TAC §§101.20(2), 113.1090, and 122.143(4), 40 Code of Federal Regulations (CFR) §63.6640(a), Federal Operating Permit (FOP) Number O3097, General Terms and Conditions (GTC) and Special Terms and Conditions (STC) Numbers 1.A and 1.E, and Texas Health and Safety Code (THSC), §382.085(b), by failing to maintain the catalyst inlet temperature greater than or equal to 750 degrees Fahrenheit; 30 TAC §§101.20(2), 113.1090, and 122.143(4), 40 CFR §63.6640(b), FOP Number O3097, GTC and STC Numbers 1.A and 1.E, and THSC, §382.085(b), by failing to report each instance of deviation from the emission and operating limitations; and 30 TAC §§101.20(2), 113.1090, and 122.143(4), 40 CFR §63.6650(b)(2)(4), FOP Number O3097, GTC and STC Numbers 1.A and 1.E, and THSC, §382.085(b), by failing to postmark or submit the semiannual compliance report no later than July 31 or January 31 following the end of the semiannual reporting period; PENALTY: $31,590; ENFORCEMENT COORDINATOR: Johnnie Wu, (512) 239-2524; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(19) COMPANY: Juiel's Auto Clinic, LLC; DOCKET NUMBER: 2023-1432-AIR-E; IDENTIFIER: RN103063814; LOCATION: San Antonio, Bexar County; TYPE OF FACILITY: auto body refinishing; RULES VIOLATED: 30 TAC §116.110(a) and Texas Health and Safety Code, §382.0518(a) and §382.085(b), by failing to obtain authorization prior to constructing or modifying a source of air contaminants; PENALTY: $5,000; ENFORCEMENT COORDINATOR: Amy Cox, (512) 239-4631; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(20) COMPANY: Juno Operating Company III, LLC; DOCKET NUMBER: 2024-0146-AIR-E; IDENTIFIER: RN110239159; LOCATION: Lorenzo, Lubbock County; TYPE OF FACILITY: oil and gas production facility; RULES VIOLATED: 30 TAC §116.110(a) and Texas Health and Safety Code, §382.0518(a) and §382.085(b), by failing to obtain authorization prior to constructing or modifying a source of air contaminants; PENALTY: $5,625; ENFORCEMENT COORDINATOR: Michael Wilkins, (325) 698-6134; REGIONAL OFFICE: 1977 Industrial Boulevard, Abilene, Texas 79602-7833, (325) 698-9674.

(21) COMPANY: Lonestar Fiberglass Components of Texas, LLC; DOCKET NUMBER: 2024-0774-AIR-E; IDENTIFIER: RN110860343; LOCATION: New Braunfels, Comal County; TYPE OF FACILITY: fiberglass pool production plant; RULES VIOLATED: 30 TAC §116.115(b)(2)(E)(i) and (c) and §122.143(4), New Source Review Permit Number 159174, Special Conditions Number 11, Federal Operating Permit (FOP) Number O4216, General Terms and Conditions (GTC) and Special Terms and Conditions (STC) Numbers 6 and 8, and Texas Health and Safety Code (THSC), §382.085(b), by failing to maintain records containing the information and data sufficient to demonstrate compliance with the permit; 30 TAC §122.143(4) and §122.145(2)(C), FOP Number O4216, GTC, and THSC, §382.085(b), by failing to submit a deviation report no later than 30 days after the end of each reporting period; and 30 TAC §122.143(4) and §122.146(1) and (2), FOP Number O4216, GTC and STC Number 9, and THSC, §382.085(b), by failing to certify compliance with the terms and conditions of the permit for at least each 12-month period following initial permit issuance and failing to submit a permit compliance certificate within 30 days of any certification period; PENALTY: $99,750; ENFORCEMENT COORDINATOR: Johnnie Wu, (512) 239-2524; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(22) COMPANY: NERAL ENTERPRISES, INCORPORATED dba Kirby Convenience Store; DOCKET NUMBER: 2023-0655-PST-E; IDENTIFIER: RN102873213; LOCATION: Kirby, Bexar County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULES VIOLATED: 30 TAC §334.42(a) and §334.48(a) and (b), by failing to operate, maintain, and manage the underground storage tank (UST) system in accordance with accepted industry practices and in a manner that will prevent releases of regulated substances; 30 TAC §334.48(g)(1)(A)(ii), (h)(1)(A)(i), and (B)(ii) and TWC, §26.3475(c)(2), by failing to test the spill prevention equipment at least once every three years to ensure the equipment is liquid tight, also failing to conduct a walkthrough inspection for the spill prevention equipment at least once every 30 days, and lastly, failing to conduct the annual walkthrough inspection of the containment sumps; 30 TAC §334.50(b)(1)(A) and TWC, §26.3475(c)(1), by failing to monitor the USTs for releases in a manner which will detect a release at a frequency of at least once every 30 days; 30 TAC §334.76(1), by failing to perform an initial response action within 24 hours of a release from an UST system; and 30 TAC §334.77(b) and §334.78(c), by failing to submit a report summarizing the initial abatement steps taken within 20 days after a release of a regulated substance from a UST system, and failing to submit a site assessment report within 45 days after a confirmed release from a UST system; PENALTY: $22,602; ENFORCEMENT COORDINATOR: Eunice Adegelu, (512) 239-5082; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

(23) COMPANY: NEW MUBIN, LLC dba Star Stop 6; DOCKET NUMBER: 2024-1273-PST-E; IDENTIFIER: RN101728624; LOCATION: Orange, Orange County; TYPE OF FACILITY: convenience store with retail sales of gasoline; RULES VIOLATED: 30 TAC §334.49(c)(4)(C) and TWC, §26.3475(d), by failing to test the corrosion protection system for operability and adequacy of protection at least once every three years; 30 TAC §334.50(b)(1)(B) and (2)(A)(iii) and TWC, §26.3475(a) and (c)(1), by failing to monitor the underground storage tanks and the associated pressurized piping installed on or after January 1, 2009, in a manner which will detect a release at a frequency of at least once every 30 days by using interstitial monitoring; and 30 TAC §334.606, by failing to maintain required operator training certification documentation on-site and make it available for inspection upon request by agency personnel; PENALTY: $10,938; ENFORCEMENT COORDINATOR: Rachel Murray, (903) 535-5149; REGIONAL OFFICE: 2916 Teague Drive, Tyler, Texas 75701-3734, (903) 535-5100.

(24) COMPANY: Nortex RediMix, LLC; DOCKET NUMBER: 2023-1112-AIR-E; IDENTIFIER: RN109942433; LOCATION: Dallas, Dallas County; TYPE OF FACILITY: concrete batch plant; RULES VIOLATED: 30 TAC §§116.110(a), 116.116(b)(1), and 116.615(2) and Texas Health and Safety Code, §382.0518(a) and §382.085(b), by failing to obtain authorization prior to constructing or modifying a source of air contaminants; PENALTY: $11,200; ENFORCEMENT COORDINATOR: Desmond Martin, (512) 239-2814; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(25) COMPANY: Pioneer Natural Resources USA Incorporated; DOCKET NUMBER: 2023-0217-AIR-E; IDENTIFIER: RN110487055; LOCATION: Midland, Midland County; TYPE OF FACILITY: natural gas and oil production site; RULES VIOLATED: 30 TAC §106.6(b) and §106.492(1)(B), and Permit by Rule Registration Number 153412, and Texas Health and Safety Code, §382.085(b), by failing to operate the flare with a flame present at all times and failing to prevent unauthorized emissions; PENALTY: $9,375; ENFORCEMENT COORDINATOR: Yuliya Dunaway, (210) 403-4077; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(26) COMPANY: Pioneer Natural Resources USA, Incorporated; DOCKET NUMBER: 2023-1402-AIR-E; IDENTIFIER:

RN110644952; LOCATION: Midland, Midland County; TYPE OF FACILITY: oil and gas production site; RULES VIOLATED: 30 TAC §106.6(b), §116.115(c), and 116.615(2), Standard Permit Registration Number 155235, and Texas Health and Safety Code, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: $9,375; ENFORCEMENT COORDINATOR: Trenton White, (903) 535-5155; REGIONAL OFFICE: 2916 Teague Drive, Tyler, Texas 75701-3734, (903) 535-5100.

(27) COMPANY: ROCKSPRINGS 380 RVP LLC; DOCKET NUMBER: 2025-0357-PWS-E; IDENTIFIER: RN111755914; LOCATION: Decatur, Wise County; TYPE OF FACILITY: public water supply; RULE VIOLATED: 30 TAC §290.39(o)(1), by failing to adopt and submit to the Executive Director a complete Emergency Preparedness Plan that demonstrates the facility's ability to provide emergency operations; PENALTY: $600; ENFORCEMENT COORDINATOR: Taner Hengst, (512) 239-1143; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(28) COMPANY: SA Tejas RV Park, LLC; DOCKET NUMBER: 2025-0169-PWS-E; IDENTIFIER: RN102320165; LOCATION: San Antonio, Bexar County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.39(j) and Texas Health and Safety Code (THSC), §341.0351, by failing to notify the executive director (ED) prior to making any significant change or addition to the system's production, treatment, storage, pressure maintenance, or distribution facilities; 30 TAC §290.39(j)(1)(A) and THSC, §341.0351, by failing to notify the ED and receive approval prior to making a significant change or addition where the change in the existing systems results in an increase or decrease in production, treatment, storage, or pressure maintenance; 30 TAC §290.42(j), by failing to use an approved chemical or media for the disinfection of potable water that conforms to the American National Standards Institute/National Sanitation Foundation Standard 60 for Drinking Water Chemicals; 30 TAC §290.42(l), by failing to maintain a thorough and up-to-date plant operations manual for operator review and reference; 30 TAC §290.46(m), by failing to initiate maintenance and housekeeping practices to ensure the good working condition and general appearance of the system's facilities and equipment; 30 TAC §290.46(m)(6), by failing to maintain all pumps, motors, valves, and other mechanical devices in good working condition; 30 TAC §290.46(n)(2), by failing to make available an accurate and up-to-date map of the distribution system so that valves and mains can be easily located during emergencies; 30 TAC §290.109(d)(1)(A), by failing to collect routine distribution coliform samples at a customer's premise, dedicated sampling station, or other designated compliance sampling location at active service connections which are representative of water quality throughout the distribution system; and 30 TAC §290.110(e)(4)(B), by failing to retain the Disinfection Level Quarterly Operating Reports (DLQORs) and provide a copy if requested by the ED; PENALTY: $3,375; ENFORCEMENT COORDINATOR: Wyatt Throm, (512) 239-1120; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(29) COMPANY: San Diego Municipal Utility District Number 1; DOCKET NUMBER: 2025-0125-PWS-E; IDENTIFIER: RN102679180; LOCATION: San Diego, Duval County; TYPE OF FACILITY: public water supply; RULES VIOLATED: 30 TAC §290.45(b)(1)(D)(i) and Texas Health and Safety Code, §341.0315(c), by failing to provide two or more wells having a total capacity of 0.6 gallons per minute per connection; PENALTY: $765; ENFORCEMENT COORDINATOR: Wyatt Throm, (512) 239-1120; REGIONAL OFFICE: P.O. Box 13087, Austin, Texas 78711-3087, (512) 239-2545.

(30) COMPANY: SOUTHWEST SHIPYARD, L.P.; DOCKET NUMBER: 2024-1323-IWD-E; IDENTIFIER: RN100248749; LOCATION: Channelview, Harris County; TYPE OF FACILITY: marine vessel cleaning and repair facility; RULES VIOLATED: 30 TAC §305.125(1), TWC, §26.121(a)(1), and Texas Pollutant Discharge Elimination System Permit Number WQ0002605000, Effluent Limitations and Monitoring Requirements Number 1 for Outfall 001, by failing to comply with permitted effluent limitations; PENALTY: $22,750; SUPPLEMENTAL ENVIRONMENTAL PROJECT OFFSET AMOUNT: $9,100; ENFORCEMENT COORDINATOR: Alejandra Basave, (512) 239-4168; REGIONAL OFFICE: 14250 Judson Road, San Antonio, Texas 78233-4480, (210) 492-3096.

(31) COMPANY: Wink Amine Treater, LLC; DOCKET NUMBER: 2025-0159-AIR-E; IDENTIFIER: RN111756912; LOCATION: Pyote, Winkler County; TYPE OF FACILITY: oil and gas production facility; RULES VIOLATED: 30 TAC §116.115(c) and §116.615(2), Standard Permit Registration Number 175554, and Texas Health and Safety Code, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: $5,563; ENFORCEMENT COORDINATOR: Trenton White, (903) 535-5155; REGIONAL OFFICE: 2916 Teague Drive, Tyler, Texas 75701-3734, (903) 535-5100.

(32) COMPANY: XTO Energy Incorporated; DOCKET NUMBER: 2024-1019-AIR-E; IDENTIFIER: RN102527504; LOCATION: Denver City, Gaines County; TYPE OF FACILITY: oil and gas production plant; RULES VIOLATED: 30 TAC §101.201(c) and Texas Health and Safety Code (THSC), §382.085(b), by failing to submit a final record for a reportable emissions event no later than two weeks after the end of the emissions event; and 30 TAC §116.615(2), Standard Permit Registration Number 161909, and Texas Health and Safety Code, §382.085(b), by failing to prevent unauthorized emissions; PENALTY: $18,938; ENFORCEMENT COORDINATOR: Caleb Martin, (512) 239-2091; REGIONAL OFFICE: 5425 Polk Street, Suite H, Houston, Texas 77023-1452, (713) 767-3500.

TRD-202502513
Gitanjali Yadav
Deputy Director, Litigation Division
Texas Commission on Environmental Quality
Filed: July 15, 2025

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Combined Notice of Public Meeting and Notice of Application and Preliminary Decision for TPDES Permit for Municipal Wastewater New Permit No. WQ0016549001

APPLICATION AND PRELIMINARY DECISION. Lakshmi Land Group LLC, 1821 Margaret Street, Austin, Texas 78704, has applied to the Texas Commission on Environmental Quality (TCEQ) for new Texas Pollutant Discharge Elimination System (TPDES) Permit No. WQ0016549001, to authorize the discharge of treated domestic wastewater at a daily average flow not to exceed 900,000 gallons per day. TCEQ received this application on January 24, 2024.

A combined notice has been created to provide the public notice of the draft permit and the scheduling of the public meeting.

The facility will be located approximately 0.48 miles west of the intersection of County Road 192 and East State Highway 29, in Williamson County, Texas 78626. The treated effluent will be discharged to a roadside ditch, thence to a man-made ditch, thence to the San Gabriel/North Fork San Gabriel River in Segment No. 1248 of the Brazos River Basin. The unclassified receiving water uses are minimal aquatic life use for Roadside ditch and Man-made ditch. The designated uses for Segment No. 1248 are primary contact recreation, public water supply, aquifer protection, and high aquatic life use. In accordance with 30 Texas Administrative Code §307.5 and the *TCEQ Procedures to*

Implement the Texas Surface Water Quality Standards (June 2010), an antidegradation review of the receiving waters was performed. A Tier 1 antidegradation review has preliminarily determined that existing water quality uses will not be impaired by this permit action. Numerical and narrative criteria to protect existing uses will be maintained. A Tier 2 review has preliminarily determined that no significant degradation of water quality is expected in the San Gabriel/North Fork San Gabriel River, which has been identified as having high aquatic life uses. Existing uses will be maintained and protected. The preliminary determination can be reexamined and may be modified if new information is received. This link to an electronic map of the site or facility's general location is provided as a public courtesy and is not part of the application or notice. For the exact location, refer to the application.

https://gisweb.tceq.texas.gov/LocationMapper/?marker=-97.512777,30.643611&level=18

The TCEQ Executive Director has completed the technical review of the application and prepared a draft permit. The draft permit, if approved, would establish the conditions under which the facility must operate. The Executive Director has made a preliminary decision that this permit, if issued, meets all statutory and regulatory requirements. The permit application, Executive Director's preliminary decision, and draft permit are available for viewing and copying at Round Rock Public Library, 200 East Liberty Avenue, Round Rock, in Williamson County, Texas. The application, including any updates, and associated notices are available electronically at the following webpage:

https://www.tceq.texas.gov/permitting/wastewater/pending-permits/tpdes-applications

ALTERNATIVE LANGUAGE NOTICE. Alternative language notice in Spanish is available at https://www.tceq.texas.gov/permitting/wastewater/plain-language-summaries-and-public-notices. El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/wastewater/plain-language-summaries-and-public-notices.

PUBLIC COMMENT / PUBLIC MEETING. You may submit public comments about this application. The TCEQ will hold a public meeting on this application because it was requested by a local legislator. The purpose of a public meeting is to provide the opportunity to submit comments or to ask questions about the application. A public meeting will be held and will consist of two parts, an Informal Discussion Period and a Formal Comment Period. A public meeting is not a contested case hearing under the Administrative Procedure Act. During the Informal Discussion Period, the public will be encouraged to ask questions of the applicant and TCEQ staff concerning the permit application. The comments and questions submitted orally during the Informal Discussion Period will not be considered before a decision is reached on the permit application and no formal response will be made. Responses will be provided orally during the Informal Discussion Period. During the Formal Comment Period on the permit application, members of the public may state their formal comments orally into the official record. A written response to all timely, relevant and material, or significant comments will be prepared by the Executive Director. All formal comments will be considered before a decision is reached on the permit application. A copy of the written response will be sent to each person who submits a formal comment or who requested to be on the mailing list for this permit application and provides a mailing address. Only relevant and material issues raised during the Formal Comment Period can be considered if a contested case hearing is granted on this permit application.

The Public Meeting is to be held:

Thursday, August 28, 2025 at 7:00 p.m.

Georgetown Community Center

445 E. Morrow Street

Georgetown, Texas 78626

Persons with disabilities who need special accommodations at the meeting should call the Office of the Chief Clerk at (512) 239-3300 or (800) RELAY-TX (TDD) at least five business days prior to the meeting.

OPPORTUNITY FOR A CONTESTED CASE HEARING. After the deadline for submitting public comments, the Executive Director will consider all timely comments and prepare a response to all relevant and material or significant public comments. **Unless the application is directly referred for a contested case hearing, the response to comments will be mailed to everyone who submitted public comments and to those persons who are on the mailing list for this application. If comments are received, the mailing will also provide instructions for requesting a contested case hearing or reconsideration of the Executive Director's decision.** A contested case hearing is a legal proceeding similar to a civil trial in a state district court.

TO REQUEST A CONTESTED CASE HEARING, YOU MUST INCLUDE THE FOLLOWING ITEMS IN YOUR REQUEST: your name, address, phone number; applicant's name and proposed permit number; the location and distance of your property/activities relative to the proposed facility; a specific description of how you would be adversely affected by the facility in a way not common to the general public; a list of all disputed issues of fact that you submit during the comment period; and the statement "[I/we] request a contested case hearing." If the request for contested case hearing is filed on behalf of a group or association, the request must designate the group's representative for receiving future correspondence; identify by name and physical address an individual member of the group who would be adversely affected by the proposed facility or activity; provide the information discussed above regarding the affected member's location and distance from the facility or activity; explain how and why the member would be affected; and explain how the interests the group seeks to protect are relevant to the group's purpose.

Following the close of all applicable comment and request periods, the Executive Director will forward the application and any requests for reconsideration or for a contested case hearing to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

The Commission may only grant a request for a contested case hearing on issues the requestor submitted in their timely comments that were not subsequently withdrawn. **If a hearing is granted, the subject of a hearing will be limited to disputed issues of fact or mixed questions of fact and law relating to relevant and material water quality concerns submitted during the comment period.**

EXECUTIVE DIRECTOR ACTION. The Executive Director may issue final approval of the application unless a timely contested case hearing request or request for reconsideration is filed. If a timely hearing request or request for reconsideration is filed, the Executive Director will not issue final approval of the permit and will forward the application and request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

MAILING LIST. If you submit public comments, a request for a contested case hearing or a reconsideration of the Executive Director's decision, you will be added to the mailing list for this specific application to receive future public notices mailed by the Office of the Chief Clerk. In addition, you may request to be placed on: (1) the permanent mailing list for a specific applicant name and permit number; and/or (2) the mailing list for a specific county. If you wish to be placed on the

permanent and/or the county mailing list, clearly specify which list(s) and send your request to TCEQ Office of the Chief Clerk at the address below.

All written public comments and public meeting requests must be submitted to the Office of the Chief Clerk, MC 105, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087 or electronically at www.tceq.texas.gov/goto/comment within 30 days from the date of newspaper publication of this notice, or by the date of the public meeting, whichever is later.

INFORMATION AVAILABLE ONLINE. For details about the status of the application, visit the Commissioners' Integrated Database at www.tceq.texas.gov/goto/cid. Search the database using the permit number for this application, which is provided at the top of this notice.

AGENCY CONTACTS AND INFORMATION. Public comments and requests must be submitted either electronically at www.tceq.texas.gov/goto/comment, or in writing to the Texas Commission on Environmental Quality, Office of the Chief Clerk, MC 105, P.O. Box 13087, Austin, Texas 78711-3087. Any personal information you submit to the TCEQ will become part of the agency's record; this includes email addresses. For more information about this permit application or the permitting process, please call the TCEQ Public Education Program, Toll Free, at (800) 687-4040 or visit their website at www.tceq.texas.gov/goto/pep. Si desea información en español, puede llamar al (800) 687-4040.

Further information may also be obtained from Lakshmi Land Group LLC at the address stated above or by calling Mr. Daniel LaCour, P.E., Project Manager, at (512) 886-4538.

Issuance Date: July 15, 2025

TRD-202502532
Laurie Gharis
Chief Clerk
Texas Commission on Environmental Quality
Filed: July 16, 2025

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Enforcement Orders

An agreed order was adopted regarding ROCHELLE WATER SUPPLY CORPORATION, Docket No. 2022-1409-PWS-E on July 15, 2025, assessing $2,857 in administrative penalties with $571 deferred. Information concerning any aspect of this order may be obtained by contacting Rachel Frey, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Solvay Specialty Polymers USA, L.L.C., Docket No. 2022-1659-AIR-E on July 15, 2025, assessing $0 in administrative penalties. Information concerning any aspect of this order may be obtained by contacting Mackenzie Mehlmann, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding JIVA CORPORATION, INC. dba Primo Food Mart, Docket No. 2023-0351-PST-E on July 15, 2025, assessing $12,375 in administrative penalties with $2,475 deferred. Information concerning any aspect of this order may be obtained by contacting Ramyia Wendt, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Albemarle Corporation, Docket No. 2023-0374-AIR-E on July 15, 2025, assessing $10,875 in administrative penalties. Information concerning any aspect of this order may be obtained by contacting Yuliya Dunaway, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Murillo Store LLC dba Adams Mini Mart, Docket No. 2023-0426-PST-E on July 15, 2025, assessing $4,918 in administrative penalties with $983 deferred. Information concerning any aspect of this order may be obtained by contacting Lauren Little, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Pack & Pack, L.P., Docket No. 2023-0492-PWS-E on July 15, 2025, assessing $400 in administrative penalties with $80 deferred. Information concerning any aspect of this order may be obtained by contacting Ronica Rodriguez Scott, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Crown Mountain Water Supply Corporation, Docket No. 2023-0507-PWS-E on July 15, 2025, assessing $3,748 in administrative penalties with $749 deferred. Information concerning any aspect of this order may be obtained by contacting Claudia Bartley, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding CROWN Cork & Seal USA, Inc., Docket No. 2023-0934-AIR-E on July 15, 2025, assessing $4,000 in administrative penalties with $800 deferred. Information concerning any aspect of this order may be obtained by contacting Yuliya Dunaway, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Mark D. Allen dba Local Tire Disposal, Docket No. 2023-1028-MSW-E on July 15, 2025, assessing $10,000 in administrative penalties with $2,000 deferred. Information concerning any aspect of this order may be obtained by contacting Ramyia Wendt, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Cody Blake Davis dba Davis Complex, Docket No. 2023-1041-PWS-E on July 15, 2025, assessing $4,845 in administrative penalties with $969 deferred. Information concerning any aspect of this order may be obtained by contacting Deshaune Blake, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding BELLA'S MARKET, LLC, Docket No. 2023-1319-PST-E on July 15, 2025, assessing $3,375 in administrative penalties with $675 deferred. Information concerning any aspect of this order may be obtained by contacting Eresha DeSilva, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding NGO Industrial Holdings LLC, Docket No. 2023-1385-AIR-E on July 15, 2025, assessing $8,500 in administrative penalties with $1,700 deferred. Information concerning any aspect of this order may be obtained by contacting Morgan Kopcho, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding CSWR-Texas Utility Operating Company, LLC, Docket No. 2023-1485-PWS-E on July 15, 2025, assessing $1,565 in administrative penalties with $313 deferred. Information concerning any aspect of this order may be obtained by contacting Corinna Willis, Enforcement Coordinator at (512) 239-2545, Texas

Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding New Generation Excavation, LLC, Docket No. 2023-1682-MSW-E on July 15, 2025, assessing $3,375 in administrative penalties with $675 deferred. Information concerning any aspect of this order may be obtained by contacting Stephanie McCurley, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Jimmy Baggett, Docket No. 2023-1705-IHW-E on July 15, 2025, assessing $2,500 in administrative penalties with $500 deferred. Information concerning any aspect of this order may be obtained by contacting Karolyn Kent, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding City of Stamford dba City of Stamford Building Demolition Landfill, Docket No. 2024-0241-MSW-E on July 15, 2025, assessing $4,500 in administrative penalties with $900 deferred. Information concerning any aspect of this order may be obtained by contacting Tiffany Chu, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Chester Maples, Jr. dba Old Hwy 90 Water Service, Docket No. 2024-0425-PWS-E on July 15, 2025, assessing $610 in administrative penalties with $122 deferred. Information concerning any aspect of this order may be obtained by contacting Taner Hengst, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Texas Parks and Wildlife Department, Docket No. 2024-0447-PWS-E on July 15, 2025, assessing $2,625 in administrative penalties with $525 deferred. Information concerning any aspect of this order may be obtained by contacting Ronica Rodriguez, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding METHODIST HOSPITALS OF DALLAS dba Methodist Charlton Medical Hospital, Docket No. 2024-0519-PST-E on July 15, 2025, assessing $2,813 in administrative penalties with $562 deferred. Information concerning any aspect of this order may be obtained by contacting Stephanie Mccurley, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding City of Rosenberg, Docket No. 2024-0564-MWD-E on July 15, 2025, assessing $12,375 in administrative penalties with $2,475 deferred. Information concerning any aspect of this order may be obtained by contacting Mark Gamble, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding City of Schertz, Docket No. 2024-0714-PWS-E on July 15, 2025, assessing $315 in administrative penalties with $63 deferred. Information concerning any aspect of this order may be obtained by contacting Claudia Bartley, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Petroleum Wholesale, L.P. dba Sunmart 457, Docket No. 2024-0752-PST-E on July 15, 2025, assessing $7,650 in administrative penalties. Information concerning any aspect of this order may be obtained by contacting Jennifer Peltier, Staff Attorney at (512) 239-3400, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Premium Waters, Inc., Docket No. 2024-1298-IWD-E on July 15, 2025, assessing $11,250 in administrative penalties with $2,250 deferred. Information concerning any aspect of this order may be obtained by contacting Madison Stringer, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Ridgemar (Eagle Ford) LLC, Docket No. 2024-1361-AIR-E on July 15, 2025, assessing $12,351 in administrative penalties with $2,470 deferred. Information concerning any aspect of this order may be obtained by contacting Desmond Martin, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Aqua Texas, Inc., Docket No. 2024-1409-PWS-E on July 15, 2025, assessing $3,355 in administrative penalties with $671 deferred. Information concerning any aspect of this order may be obtained by contacting Kaisie Hubschmitt, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Rambling Vines RVP, L.L.C., Docket No. 2024-1466-PWS-E on July 15, 2025, assessing $500 in administrative penalties with $100 deferred. Information concerning any aspect of this order may be obtained by contacting Deshaune Blake, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Undine Texas Environmental, LLC, Docket No. 2024-1505-MWD-E on July 15, 2025, assessing $9,000 in administrative penalties with $1,800 deferred. Information concerning any aspect of this order may be obtained by contacting Madison Stringer, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Undine Texas Environmental, LLC, Docket No. 2024-1507-MWD-E on July 15, 2025, assessing $9,300 in administrative penalties with $1,860 deferred. Information concerning any aspect of this order may be obtained by contacting Madison Stringer, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Central Texas Water Supply Corporation, Docket No. 2024-1563-PWS-E on July 15, 2025, assessing $615 in administrative penalties with $123 deferred. Information concerning any aspect of this order may be obtained by contacting Ronica Rodriguez Scott, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding PLAINVIEW SERENITY CENTER, INC, Docket No. 2024-1575-PWS-E on July 15, 2025, assessing $525 in administrative penalties with $105 deferred. Information concerning any aspect of this order may be obtained by contacting Emerson Rinewalt, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Buffalo Trail Council, Inc., Boy Scouts of America, Docket No. 2024-1628-PWS-E on July 15, 2025, assessing $1,050 in administrative penalties with $210 deferred. Information concerning any aspect of this order may be obtained by contacting Wyatt Throm, Enforcement Coordinator at (512) 239-2545,

Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding FRIBERG-COOPER WATER SUPPLY CORPORATION, Docket No. 2024-1631-PWS-E on July 15, 2025, assessing $248 in administrative penalties with $49 deferred. Information concerning any aspect of this order may be obtained by contacting Anjali Talpallikar, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding DOBBIN-PLANTERSVILLE WATER SUPPLY CORPORATION, (a non profit Corporation), Docket No. 2024-1653-PWS-E on July 15, 2025, assessing $2,310 in administrative penalties with $462 deferred. Information concerning any aspect of this order may be obtained by contacting Emerson Rinewalt, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding Aqua Texas, Inc., Docket No. 2024-1706-PWS-E on July 15, 2025, assessing $1,000 in administrative penalties with $200 deferred. Information concerning any aspect of this order may be obtained by contacting Mason Demasi, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding CSWR-Texas Utility Operating Company, LLC, Docket No. 2024-1851-PWS-E on July 15, 2025, assessing $5,050 in administrative penalties with $1,010 deferred. Information concerning any aspect of this order may be obtained by contacting De'Shaune Blake, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding DENNING WATER SUPPLY CORPORATION, Docket No. 2024-1907-PWS-E on July 15, 2025, assessing $188 in administrative penalties with $37 deferred. Information concerning any aspect of this order may be obtained by contacting Corinna Willis, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

An agreed order was adopted regarding MURPHY OIL USA, INC. dba Murphy Express 8649, Docket No. 2025-0164-PST-E on July 15, 2025, assessing $1,125 in administrative penalties with $225 deferred. Information concerning any aspect of this order may be obtained by contacting Adriana Fuentes, Enforcement Coordinator at (512) 239-2545, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087.

TRD-202502535
Laurie Gharis
Chief Clerk
Texas Commission on Environmental Quality
Filed: July 16, 2025

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Notice of an Amendment to a Certificate of Adjudication Application No. 12-4318E

Notice Issued July 11, 2025

Amy S. Neuhaus 1994 Trust, Brent A. Neuhaus 1994 Trust, and Ryan S. Neuhaus 1994 (Owners/Applicants), 7736 Central Park Dr., Waco, Texas 76712, seeks to amend their portion of Certificate of Adjudication No. 12-4318, to remove mining purposes of use, change the place of use for agricultural purposes to irrigate 600 acres out of a 667.31-acre tract of land in Falls County, and add a diversion point on the Brazos River, Brazos River Basin, in Falls County. More information on the application and how to participate in the permitting process is given below.

The application and fees were received on June 3, 2021. Additional information was received on December 7, 2021. The application was declared administratively completed and filed with the Office of the Chief Clerk on January 14, 2022.

The Executive Director completed the technical review of the application and prepared a draft amendment. The draft amendment, if granted, would include special conditions including, but not limited to, streamflow restrictions. The application, technical memoranda, and Executive Director's draft amendment are available for viewing on the TCEQ webpage at:

https://www.tceq.texas.gov/permitting/water_rights/wr-permitting/view-wr-pend-apps. Alternatively, you may request a copy of the documents by contacting the TCEQ Office of the Chief Clerk by phone at (512) 239-3300 or by mail at TCEQ OCC, Notice Team (MC-105), P.O. Box 13087, Austin, Texas 78711.

Written public comments and requests for a public meeting should be submitted to the Office of the Chief Clerk, at the address provided in the information section below by July 25, 2025. A public meeting is intended for the taking of public comment and is not a contested case hearing. A public meeting will be held if the Executive Director determines that there is a significant degree of public interest in the application.

The TCEQ may grant a contested case hearing on this application if a written hearing request is filed by July 25, 2025. The Executive Director can consider approval of the application unless a written request for a contested case hearing is filed by July 25, 2025.

To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) applicant's name and permit number; (3) the statement "[*I/we*] request a contested case hearing;" (4) a brief and specific description of how you would be affected by the application in a way not common to the general public; and (5) the location and distance of your property relative to the proposed activity. You may also submit proposed conditions for the requested permit which would satisfy your concerns. Requests for a contested case hearing must be submitted in writing to the Office of the Chief Clerk at the address provided in the information section below.

If a hearing request is filed, the Executive Director will not issue the permit and will forward the application and hearing request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting.

Written hearing requests, public comments, or requests for a public meeting should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, Texas 78711-3087 or electronically at https://www14.tceq.texas.gov/epic/eComment/ by entering ADJ 4318 in the search field. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, at the same address. For additional information, individual members of the general public may contact the Public Education Program at (800) 687-4040.

General information regarding the TCEQ can be found at our website at www.tceq.texas.gov. Si desea información en español, puede llamar al (800) 687-4040 o por el internet al http://www.tceq.texas.gov.

TRD-202502530

Laurie Gharis
Chief Clerk
Texas Commission on Environmental Quality
Filed: July 16, 2025

♦ ♦ ♦

Notice of District Petition - D-06112025-023

Notice issued July 16, 2025 TCEQ

Internal Control No. D-06112025-023: Needville Land Investment, LLC, a Texas limited liability company, (Petitioner) filed a petition for creation of Fort Bend County Municipal Utility District No. 274 (District) with the Texas Commission on Environmental Quality (TCEQ). The petition was filed pursuant to Article XVI, §59 of the Constitution of the State of Texas; Chapters 49 and 54 of the Texas Water Code; 30 Texas Administrative Code Chapter 293; and the procedural rules of the TCEQ. The petition states that: (1) the Petitioner holds title to a majority in value of the land to be included in the proposed District; (2) there is one lienholder, Western Alliance Bank, an Arizona Corporation, on the property to be included in the proposed District and information provided indicates that the lienholder consents to the creation of the proposed District; (3) the proposed District will contain approximately 265.60 acres located within Fort Bend County, Texas; and (4) none of the land within the proposed District is within the corporate limits or extraterritorial jurisdiction of any city. The petition further states that the proposed District will: (1) purchase, construct, acquire, maintain, own, operate, repair, improve and extend a waterworks and wastewater system for residential and commercial purposes; (2) construct, acquire, improve, extend, maintain, and operate works, improvements, facilities, plants, equipment, and appliances helpful or necessary to provide more adequate drainage for the proposed District; (3) control, abate, and amend local storm waters or other harmful excesses of waters; and (4) such other purchase, construction, acquisition, improvement, maintenance, and operation of such facilities, systems, plants, and enterprises, road facilities, and park and recreational facilities as shall be consistent with all of the purposes for which the proposed District is created. According to the petition, a preliminary investigation has been made to determine the cost of the project, and it is estimated by the Petitioner that the cost of said project will be approximately $67,560,000 ($49,205,000 for water, wastewater, and drainage plus $5,060,000 for recreation plus $13,295,000 for roads).

INFORMATION SECTION

To view the complete issued notice, view the notice on our website at www.tceq.texas.gov/agency/cc/pub_notice.html or call the Office of the Chief Clerk at (512) 239-3300 to obtain a copy of the complete notice. When searching the website, type in the issued date range shown at the top of this document to obtain search results. The TCEQ may grant a contested case hearing on the petition if a written hearing request is filed within 30 days after the newspaper publication of the notice. To request a contested case hearing, you must submit the following: (1) your name (or for a group or association, an official representative), mailing address, daytime phone number, and fax number, if any; (2) the name of the Petitioner and the TCEQ Internal Control Number; (3) the statement "I/we request a contested case hearing"; (4) a brief description of how you would be affected by the petition in a way not common to the general public; and (5) the location of your property relative to the proposed District's boundaries. You may also submit your proposed adjustments to the petition. Requests for a contested case hearing must be submitted in writing to the Office of the Chief Clerk at the address provided in the information section below. The Executive Director may approve the petition unless a written request for a contested case hearing is filed within 30 days after the newspaper publication of this notice. If a hearing request is filed, the Executive Director will not approve the petition and will forward the petition and hearing request to the TCEQ Commissioners for their consideration at a scheduled Commission meeting. If a contested case hearing is held, it will be a legal proceeding similar to a civil trial in state district court. Written hearing requests should be submitted to the Office of the Chief Clerk, MC 105, TCEQ, P.O. Box 13087, Austin, Texas 78711-3087. For information concerning the hearing process, please contact the Public Interest Counsel, MC 103, at the same address. For additional information, individual members of the general public may contact the Districts Review Team, at (512) 239-4691. Si desea información en español, puede llamar al (512) 239-0200. General information regarding TCEQ can be found at our website at www.tceq.texas.gov.

TRD-202502533
Laurie Gharis
Chief Clerk
Texas Commission on Environmental Quality
Filed: July 16, 2025

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Notice of Opportunity to Comment on a Default Order of Administrative Enforcement Actions

The Texas Commission on Environmental Quality (TCEQ or commission) staff is providing an opportunity for written public comment on the listed Default Order (DO). The commission staff proposes a DO when the staff has sent the Executive Director's Preliminary Report and Petition (EDPRP) to an entity outlining the alleged violations; the proposed penalty; the proposed technical requirements necessary to bring the entity back into compliance; and the entity fails to request a hearing on the matter within 20 days of its receipt of the EDPRP or requests a hearing and fails to participate at the hearing. Similar to the procedure followed with respect to Agreed Orders entered into by the executive director of the commission, in accordance with Texas Water Code (TWC), §7.075, this notice of the proposed order and the opportunity to comment is published in the *Texas Register* no later than the 30th day before the date on which the public comment period closes, which in this case is **August 25, 2025**. The commission will consider any written comments received, and the commission may withdraw or withhold approval of a DO if a comment discloses facts or considerations that indicate that consent to the proposed DO is inappropriate, improper, inadequate, or inconsistent with the requirements of the statutes and rules within the commission's jurisdiction, or the commission's orders and permits issued in accordance with the commission's regulatory authority. Additional notice of changes to a proposed DO is not required to be published if those changes are made in response to written comments.

A copy of each proposed DO is available for public inspection at both the commission's central office, located at 12100 Park 35 Circle, Building A, 3rd Floor, Austin, Texas 78753, (512) 239-3400 and at the applicable regional office listed as follows. Written comments about the DO should be sent to the attorney designated for the DO at the commission's central office at P.O. Box 13087, MC 175, Austin, Texas 78711-3087 and must be **received by 5:00 p.m. on August 25, 2025**. The commission's attorneys are available to discuss the DOs and/or the comment procedure at the listed phone numbers; however, TWC, §7.075, provides that comments on the DO shall be submitted to the commission in **writing**.

(1) COMPANY: SHENANDOAH ESTATES WATER CO., INC.; DOCKET NUMBER: 2021-0652-PWS-E; TCEQ ID NUMBER: RN101244408; LOCATION: 1.8 miles west of Interstate Highway 35 on County Road 2131 near Valley View, Cooke County; TYPE OF FACILITY: public water system; RULES VIOLATED: 30 TAC §290.106(e), by failing to provide the results of cyanide sampling to

the executive director (ED) for the January 1, 2018 through December 31, 2020 monitoring period; 30 TAC §290.106(e) and §290.107(e), by failing to provide the results of Synthetic Organic Contaminants (method 504) and metals sampling to the ED for the January 1, 2017 through December 31, 2019 monitoring period; 30 TAC §290.106(e) and §290.107(e), by failing to provide the results of nitrate and Volatile Organic Contaminants sampling to the ED for the January 1, 2020-December 31, 2020 monitoring period; 30 TAC §290.110(e)(4)(A) and (f)(3), by failing to submit a Disinfectant Level Quarterly Operating Report (DLQOR) to the ED by the tenth day of the month following the end of each quarter for the fourth quarter of 2020; 30 TAC §290.122(c)(2)(A) and (f), by failing to provide public notification and submit a copy of the notification, accompanied with a signed Certificate of Delivery, to the ED regarding the failure to submit a DLQOR for the fourth quarter of 2019; 30 TAC §290.122(c)(2)(A) and (f), by failing to provide public notification and submit a copy of the notification to the ED regarding the failure to collect and report the results of nitrate sampling for the January 1, 2014 through December 31, 2014 monitoring period and regarding the failure to collect and report the results of cyanide sampling for the January 1, 2012 through December 31, 2014 monitoring period; PENALTY: $4,392; STAFF ATTORNEY: Benjamin Pence, Litigation, MC 175, (512) 239-2157; REGIONAL OFFICE: Dallas-Fort Worth Regional Office, 2309 Gravel Drive, Fort Worth, Texas 76118-6951, (817) 588-5800.

TRD-202502516
Gitanjali Yadav
Deputy Director, Litigation
Texas Commission on Environmental Quality
Filed: July 15, 2025

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Notice of Public Hearing on Proposed Revisions to 30 TAC Chapter 60

The Texas Commission on Environmental Quality (TCEQ or commission) will conduct a public hearing to receive testimony regarding proposed revisions to 30 Texas Administrative Code (TAC) Chapter 60, Compliance History, under the requirements of Texas Health and Safety Code, §361.1215; Texas Water Code, §26.0481; and Texas Government Code, Chapter 2001, Subchapter B.

The proposed rulemaking would revise 30 TAC Chapter 60 relating to Compliance History. The proposed rulemaking implements the changes made to TWC §5.754 which require the consideration of moderate and minor violations, in addition to the previously considered major violations, when determining repeat violator status. This proposed rulemaking also addresses legislative direction for TCEQ to review and update the compliance history rating formula to ensure it adequately allows for comparing the compliance performance of facilities of similar complexity and to regularly update an entity's compliance history rating throughout the year.

The commission will hold a hybrid virtual and in-person public hearing on this proposal in Austin on August 18, 2025, at 10:00 a.m. in Building D, Room 191, located at 12100 Park 35 Circle. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing at 9:30 a.m.

Individuals who plan to attend the hearing virtually and want to provide oral comments and/or want their attendance on record must register by August 14, 2025. To register for the hearing, please email *Rules@tceq.texas.gov* and provide the following information: your name, your affiliation, your email address, your phone number, and whether or not you plan to provide oral comments during the hearing. Instructions for participating in the hearing will be sent on August 15, 2025, to those who register for the hearing.

For the public who do not wish to provide oral comments but would like to view the hearing may do so at no cost at:

https://events.teams.microsoft.com/event/d758c7a2-3f27-4605-bfe6-99749d686a8a@871a83a4-a1ce-4b7a-8156-3bcd93a08fba

Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, Office of Legal Services at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

A Spanish translation of this notice is available at: *https://www.tceq.texas.gov/rules/hearings.html*. If you need additional translation services, please contact TCEQ at (800) 687-4040. Si desea información general en español, puede llamar al (800) 687-4040.

Written comments may be submitted to Gwen Ricco, MC 205, Office of Legal Services, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to *fax4808@tceq.texas.gov*. Electronic comments may be submitted at: https://tceq.commentinput.com/comment/search. File size restrictions may apply to comments being submitted via TCEQ Public Comments system. All comments should reference Rule Project Number 2024-043-060-CE. The comment period closes at 11:59 p.m. on August 25, 2025. Copies of the proposed rulemaking can be obtained from the commission's website at *https://www.tceq.texas.gov/rules/propose_adopt.html*. For further information, please contact Krista Clement, Enforcement Division, at (512) 239-1234.

TRD-202502361
Gitanjali Yadav
Deputy Director, Litigation Division
Texas Commission on Environmental Quality
Filed: July 11, 2025

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Notice of Public Hearing on Proposed Revisions to 30 Texas Administrative Code Chapters 115 and 117 and to the State Implementation Plan for Bexar County

The Texas Commission on Environmental Quality (commission) will offer a public hearing to receive testimony regarding proposed state implementation plan (SIP) revisions resulting from reclassification of Bexar County from moderate to serious nonattainment for the 2015 eight-hour ozone National Ambient Air Quality Standard (NAAQS). The hearing will also be offered to receive testimony regarding proposed air quality rules applicable to Bexar County. These proposals are made under the requirements of Texas Health and Safety Code, §382.017; Texas Government Code, Chapter 2001, Subchapter B; and 40 Code of Federal Regulations §51.102 of the United States Environmental Protection Agency (EPA) concerning SIPs.

The proposed revisions to the SIP include an attainment demonstration (AD) that includes a photochemical modeling analysis and a weight-of-evidence assessment that meets EPA modeling guidance (**Project No. 2024-041-SIP-NR**) and a demonstration that includes an analysis of reasonable further progress (RFP) towards attainment (**Project No. 2024-040-SIP-NR**). The RFP SIP revision provides a vehicle miles traveled demonstration and includes motor vehicle emissions budgets (MVEB) for the 2023 analysis (milestone) year and both the RFP and AD SIP revisions include MVEBs for the 2026 attainment

year. The concurrently proposed rulemakings concern amendments to 30 Texas Administrative Code (TAC) Chapter 115, to address reasonably available control technology (RACT) requirements for major sources of volatile organic compounds (VOC) under a serious classification and RFP requirements for the 2015 ozone NAAQS (**Project No. 2025-006-115-AI**) and Chapter 117, to address RACT requirements for major sources of nitrogen oxides (NO_x) under a serious classification (**Project No. 2025-007-117-AI**).

The commission will offer a public hearing on these proposals in San Antonio on August 19, 2025, at 7:00 p.m. Central Daylight Time (CDT) in the Alamo Area Council of Governments board room, located at 2700 Northeast Loop 410, Suite 101. The hearing is structured for the receipt of oral or written comments by interested persons. Individuals may present oral statements when called upon in order of registration. Open discussion will not be permitted during the hearing; however, commission staff members will be available to discuss the proposal 30 minutes prior to the hearing.

The hearing will be conducted in English, and instructions for participating in the hearing will also be provided in Spanish. Persons who have special communication or other accommodation needs who are planning to attend the hearing should contact Sandy Wong, General Law Division at (512) 239-1802 or 1-800-RELAY-TX (TDD). Requests should be made as far in advance as possible.

Written comments may be submitted to Emily Wagoner, MC 206, Office of Air, Texas Commission on Environmental Quality, P.O. Box 13087, Austin, Texas 78711-3087, or faxed to either (512) 239-4804 or *fax4808@tceq.texas.gov*. Electronic comments may be submitted via the *Public Comment* system at: *https://tceq.commentinput.com/*. File size restrictions may apply. All comments should reference the respective project number.

The comment period closes at 11:59 p.m. CDT on August 25, 2025. Information concerning the proposed rules, including proposal documents and instructions for providing public comment, is available at https://www.tceq.texas.gov/rules/propose_adopt.html. Information concerning the proposed SIP revisions, including proposal documents and instructions for providing public comment, is available at *https://www.tceq.texas.gov/airquality/sip/sipplans.html/#prosips*. For further information, please contact the project manager for the proposed project: for **Project No. 2024-040-SIP-NR**, contact Emily Wagoner, at (512) 239-4994. For **Project No. 2024-041-SIP-NR**, contact Richard Garza, at (512) 239-4986. For **Project No. 2025-006-115-AI**, contact Julia Segura at (512) 239-2936. For **Project No. 2025-007-117-AI**, contact Javier Galván at (512) 239-6068.

TRD-202502371
Charmaine K. Backens
Deputy Director, Environmental Law Division
Texas Commission on Environmental Quality
Filed: July 11, 2025

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Notice of Public Meeting Proposed Air Quality Permit Number 174650 and Nonattainment Permit Number N312

APPLICATION AND PRELIMINARY DECISION. Equistar Chemicals, LP, P.O. Box 777, Channelview, Texas 77530-0777, has applied to the Texas Commission on Environmental Quality (TCEQ) for issuance of Proposed Air Quality Permit Numbers 174650 and N312, which would authorize construction of an Ethylene Derivatives Unit located at 8280 Sheldon Road, Channelview, Harris County, Texas 77530. **AVISO DE IDIOMA ALTERNATIVO.** El aviso de idioma alternativo en español está disponible en https://www.tceq.texas.gov/permitting/air/newsourcereview/air-permits-pendingpermit-apps. This application was submitted to the TCEQ on November 17, 2023. The proposed facility will emit the following air contaminants in amounts significant enough to require a Nonattainment Review: volatile organic compounds. In addition, the facility will emit: carbon monoxide, hazardous air pollutants, nitrogen oxides, organic compounds, particulate matter including particulate matter with diameters of 10 microns or less and 2.5 microns or less and sulfur dioxide. No other pollutant emission increase will result from this facility.

The executive director has completed the technical review of the application and prepared a draft permit which, if approved, would establish the conditions under which the facility must operate. The permit application, the executive director's preliminary decision which includes the draft permit, the executive director's preliminary determination summary, and the executive director's air quality analysis will be available for viewing and copying at the TCEQ central office, the TCEQ Houston regional office, and at the North Channel Library, 15741 Wallisville Road, Houston, Harris County, Texas. The facility's compliance file, if any exists, is available for public review at the TCEQ Houston Regional Office, 5425 Polk Street, Suite H, Houston, Texas. Further information may also be obtained from Equistar Chemicals, LP at the address stated above or by calling Mrs. Teresa Peneguy, Environmental Permitting at (281) 452-8330.

PUBLIC COMMENT/PUBLIC MEETING. You may submit public comments to the Office of the Chief Clerk at the address below. The TCEQ will consider all public comments in developing a final decision on the application. A public meeting will be held and will consist of two parts, an Informal Discussion Period and a Formal Comment Period. A public meeting is not a contested case hearing under the Administrative Procedure Act. During the Informal Discussion Period, the public will be encouraged to ask questions of the applicant and TCEQ staff concerning the permit application. The comments and questions submitted orally during the Informal Discussion Period will not be considered before a decision is reached on the permit application, and no formal response will be made. Responses will be provided orally during the Informal Discussion Period. During the Formal Comment Period on the permit application, members of the public may state their formal comments orally into the official record. At the conclusion of the comment period, all formal comments will be considered before a decision is reached on the permit application. A written response to all formal comments will be prepared by the executive director and will be sent to each person who submits a formal comment or who requested to be on the mailing list for this permit application and provides a mailing address. Only relevant and material issues raised during the Formal Comment Period can be considered if a contested case hearing is granted on this permit application.

The Public Meeting is to be held:

Tuesday, August 19, 2025, at 7:00 p.m.

San Jacinto College North Campus

Monument Room

5800 Uvalde Road

Houston, Texas 77049

INFORMATION. Members of the public are encouraged to submit written comments anytime during the public meeting or by mail before the close of the public comment period to the Office of the Chief Clerk, TCEQ, Mail Code MC-105, P.O. Box 13087, Austin, Texas 78711-3087 or electronically at https://www14.tceq.texas.gov/epic/eComment/. If you need more information about the permit application or the permitting process, please call the TCEQ Public Education Program, toll free, at (800)

687-4040. General information can be found at our website at www.tceq.texas.gov. *Si desea información en español, puede llamar al (800) 687-4040.*

INFORMATION AVAILABLE ONLINE. These documents are accessible through the Commission's website at www.tceq.texas.gov/goto/cid: the executive director's preliminary decision which includes the draft permit, the executive director's preliminary determination summary, the air quality analysis, and, once available, the executive director's response to comments and the final decision on this application. Access the Commissioners' Integrated Database (CID) using the above link and enter the permit number for this application. The public location mentioned above, the North Channel Library, 15741 Wallisville Road, Houston, Harris County, Texas provides public access to the internet. This link to an electronic map of the site or facility's general location is provided as a public courtesy and not part of the application or notice. For exact location, refer to application. https://gisweb.tceq.texas.gov/LocationMapper/?marker=-95.125555,29.831111&level=13.

Persons with disabilities who need special accommodations at the meeting should call the Office of the Chief Clerk at (512) 239-3300 or (800) RELAY-TX (TDD) at least five business days prior to the meeting.

Notice Issuance Date: July 15, 2025

TRD-202502531
Laurie Gharis
Chief Clerk
Texas Commission on Environmental Quality
Filed: July 16, 2025

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General Land Office

Notice and Opportunity to Comment on Requests for Consistency Agreement/Concurrence Under the Texas Coastal Management Program

On January 10, 1997, the State of Texas received federal approval of the Coastal Management Program (CMP) (62 *Federal Register* pp. 1439 - 1440). Under federal law, federal agency activities and actions affecting the Texas coastal zone must be consistent with the CMP goals and policies identified in 31 TAC Chapter 26. Requests for federal consistency review were deemed administratively complete for the following project(s) during the period of July 7, 2025 to July 11, 2025. As required by federal law, the public is given an opportunity to comment on the consistency of proposed activities in the coastal zone undertaken or authorized by federal agencies. Pursuant to 31 TAC §§30.20(f), 30.30(h), and 30.40(e), the public comment period extends 30 days from the date published on the Texas General Land Office web site. The notice was published on the web site on Friday, July 18, 2025. The public comment period for this project will close at 5:00 p.m. on Sunday, August 17, 2025.

Federal Agency Activities:

Applicant: U.S. Fish and Wildlife Service Aransas National Wildlife Refuge

Location: The project site is located adjacent to the Gulf Intercoastal Water Way, at eight locations in Aransas National Wildlife Refuge (ANWR), in Aransas County, Texas. The seven locations include Mustang Lake, southwest Sundown Bay, Dunham Lake, southern ANWR boundary near Grass Island, southern Sundown Bay Island A, southern Sundown Bay Island B, back bay shoreline of Sundown Bay, and southwestern Mustang Lake.

Latitude and Longitude (NAD 83):

Project Start: 28.2450; -96.7770

Project Terminus: 28.1355; -96.9119

Mustang Lake: 28.2322; -96.7899

Southwest Sundown Bay: 28.1718; -96.8694

Dunham Lake: 28.1448; -96.8998

Near Grass Island: 28.1364; -96.9104

Sundown Bay Island A: 28.1654; -96.8785

Sundown Bay Island B: 28.1595; -96.8868

Back Bay Sundown Bay: 28.1853; -96.8507

Southwestern Mustang Lake: 28.2301; -96.7955

Project Description: The applicant proposes to shoreline protection at eight locations in the ANWR. The design of rock breakwater structures would include a maximum crest elevation of +3.5 feet North American Vertical Datum pf 1988 (NAVD88) with a crest width of 6 feet. The breakwater would be aligned along the -2-foot NAVD88 contour with sills to allow fish passage and circulation. The length of breakwater segments is not expected to exceed 500 feet with sills of 20 to 30 feet long from the crest of each subsequent segment. Each gap would contain a 12-inch high rock sill to prevent scouring. The total footprint of the project would be 35 acres. The purpose of the proposed action is to protect the existing shoreline by reducing wave energy and vessel wake impacts. No mitigation is proposed.

Type of Application: U.S. Army Corps of Engineers permit application # SWG-2025-00172. This application will be reviewed pursuant to Section 10 of the Rivers and Harbors Act of 1899 and Section 404 of the Clean Water Act.

CMP Project No: 25-1246-F2

Further information on the applications listed above, including a copy of the consistency certifications or consistency determinations for inspection, may be obtained from the Texas General Land Office Public Information Officer at 1700 N. Congress Avenue, Austin, Texas 78701, or via email at pialegal@glo.texas.gov. Comments should be sent to the Texas General Land Office Coastal Management Program Coordinator at the above address or via email at federal.consistency@glo.texas.gov.

TRD-202502514
Jennifer Jones
Chief Clerk and Deputy Land Commissioner
General Land Office
Filed: July 15, 2025

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Texas Health and Human Services Commission

Notice of Public Hearing on Proposed Rate Updates to Kidney Health Care Program, School Health and Related Services (SHARS) Program, and a Medical Policy Review for Physician Administered Drugs

August 4, 2025

9:00 a.m.

Hearing. The Texas Health and Human Services Commission (HHSC) will conduct a public hearing to receive public comments on proposed updates to Medicaid payment rates for proposed Medicaid payment rates to SHARS reimbursement methodology, Non-Medicaid payment rates to Kidney Health Care Program- Hospital and Non-Hospital, and

proposed updates to Medical Policy Review for Physician Administered Drugs.

This hearing will be conducted both in person and online. Register for the hearing in advance using the following link to join the hearing from your computer, tablet, or smartphone:

Registration URL:

https://attendee.gotowebinar.com/register/7219564220659496278

After registering, you will receive a confirmation email containing information about joining the webinar. Instructions for dialing in by phone will be provided after you register.

If you are new to GoToWebinar, please download the GoToMeeting app at https://global.gotomeeting.com/install/626873213 before the hearing starts.

Members of the public may attend the rate hearing in person, which will be held in the Public Hearing Rooms 125C, 125E, 125W in the John H. Winters Building located at 701 W 51st St., Austin, Texas. HHSC will also broadcast the public hearing. The live stream of the meeting can be accessed at https://hhs.texas.gov/about-hhs/communications-events/live-archived-meetings. For the live stream, select the "Winters Live" tab. A recording of the hearing will be archived and accessible on demand at the same website under the "Archived" tab. The hearing will be held in compliance with Texas Human Resources Code section 32.0282, which requires public notice of and hearings on proposed Medicaid reimbursements.

Any updates to the hearing details will be posted on the HHSC website at https://www.hhs.texas.gov/about/meetings-events.

Proposal. The rate actions for the following services are proposed to be effective September 1, 2025:

Non-Medicaid Review

A(1) Kidney Health Care Program - Non-Hospital Rates

A(2) Kidney Health Care Program - Hospital Rates

Medical Policy Review

B(1) Medical Policy Review- Physician Administered Drugs

SHARS Rate Methodology

Update procedure codes for auditory rehabilitation associated with prelingual and postlingual hearing loss

Expand SHARS coverage to include pure tone audiometry, speech audiometry, tympanometry, acoustic reflect testing, and conditioning play audiometry, all existing Texas Medicaid benefits

Methodology and Justification. The proposed payment rates were calculated in accordance with Title 1 of the Texas Administrative Code:

Section 355.8052 - Inpatient Hospital Reimbursement;

Section 355.8061 - Outpatient Hospital Reimbursement;

Section 355.8085 - Reimbursement Methodology for Physicians and Other Practitioners;

Section 355.8660 - Renal Dialysis Reimbursement; and

Section 355.8443 - Reimbursement Methodology for School Health and Related Services (SHARS).

Rate Hearing Packet. A briefing packet describing the proposed updates will be made available at https://pfd.hhs.texas.gov/rate-packets on July 24, 2025. Interested parties may obtain a copy of the briefing packet on or after that date by contacting the Provider Finance Department by telephone at (512) 730-7401, fax at (512) 730-7475, or email at PFD_Hospitals@hhsc.state.tx.us, PFDAcuteCare@hhs.texas.gov, ProviderFinanceSHARS@hhs.texas.gov.

Written Comments. Written comments regarding the proposed payment rates may be submitted in lieu of, or in addition to, oral testimony until 5:00 p.m. the day of the hearing. Written comments may be sent by U.S. mail, overnight mail, special delivery mail, fax, or email:

U.S. Mail

Texas Health and Human Services Commission

Attention: Provider Finance, Mail Code H-400

P.O. Box 149030

Austin, Texas 78714-9030

Overnight mail or special delivery mail

Texas Health and Human Services Commission

Attention: Provider Finance, Mail Code H-400

North Austin Complex

4601 W Guadalupe St.

Austin, Texas 78751

Telephone

(737) 867-7817

Fax

Attention: Provider Finance at (512) 730-7475

Email

PFD_Hospitals@hhsc.state.tx.us, PFDAcuteCare@hhs.texas.gov, or ProviderFinanceSHARS@hhs.texas.gov

Preferred Communication. If possible, please use email or phone to communicate with HHSC regarding this rate hearing for the quickest response.

Persons with disabilities who wish to participate in the hearing and require auxiliary aids or services should contact Provider Finance at (512) 730-7401 at least 72 hours before the hearing so appropriate arrangements can be made.

TRD-202502519
Karen Ray
Chief Counsel
Texas Health and Human Services Commission
Filed: July 15, 2025

♦ ♦ ♦

Public Notice: Drug Shortages

The Texas Health and Human Services Commission (HHSC) announces its intent to submit transmittal number 25-0023 to the Texas State Plan for Medical Assistance, under Title XIX of the Social Security Act.

The proposed amendment allows HHSC to cover and reimburse for a prescribed drug that is not a covered outpatient drug (i.e. a drug that does not have a federal rebate) when medically necessary during a nationwide drug shortage of that prescribed drug. The drug shortage must be identified by the Food and Drug Administration (FDA) or the American Society of Health-System Pharmacists (ASHP). This will allow Texas to mitigate the effects of drug shortages and ensure continued access to medication. The proposed amendment is effective July 1, 2025.

The proposed amendment is estimated to have no fiscal impact. The amendment allows prescribed drugs to be eligible for federal financial participation when medically necessary during drug shortages identified by the FDA or ASHP.

To obtain copies of the proposed amendment, interested parties may contact Jayasree Sankaran, State Plan Coordinator, by mail at the Health and Human Services Commission, P.O. Box 13247, Mail Code H-310, Austin, Texas 78711; by telephone at (512) 438-4331; or by email at Medicaid_Chip_SPA_Inquiries@hhsc.state.tx.us.

Once submitted to the Centers for Medicare and Medicaid Services for approval, copies of the proposed amendment will be available for review at the HHSC Access and Eligibility Services for local benefit offices.

TRD-202502536
Karen Ray
Chief Counsel
Texas Health and Human Services Commission
Filed: July 16, 2025

♦ ♦ ♦

Texas Lottery Commission

Scratch Ticket Game Number 2664 "HOUSTON TEXANS"

1.0 Name and Style of Scratch Ticket Game.

A. The name of Scratch Ticket Game No. 2664 is "HOUSTON TEXANS". The play style is "key number match".

1.1 Price of Scratch Ticket Game.

A. Tickets for Scratch Ticket Game No. 2664 shall be $5.00 per Scratch Ticket.

1.2 Definitions in Scratch Ticket Game No. 2664.

A. Display Printing - That area of the Scratch Ticket outside of the area where the overprint and Play Symbols appear.

B. Latex Overprint - The removable scratch-off covering over the Play Symbols on the front of the Scratch Ticket.

C. Play Symbol - The printed data under the latex on the front of the Scratch Ticket that is used to determine eligibility for a prize. Each Play Symbol is printed in Symbol font in black ink in positive except for dual-image games. The possible black Play Symbols are: 01, 02, 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22, 23, 24, 25, 26, 27, 28, 29, 30, 31, 32, 33, 34, 35, 36, 37, 38, 39, 40, FOOTBALL SYMBOL, GOALPOST SYMBOL, $5.00, $10.00, $20.00, $50.00, $100, $500, $5,000 and $100,000.

D. Play Symbol Caption - The printed material appearing below each Play Symbol which explains the Play Symbol. One caption appears under each Play Symbol and is printed in caption font in black ink in positive. The Play Symbol Caption which corresponds with and verifies each Play Symbol is as follows:

Figure 1: GAME NO. 2664 - 1.2D

PLAY SYMBOL	CAPTION
01	ONE
02	TWO
03	THR
04	FOR
05	FIV
06	SIX
07	SVN
08	EGT
09	NIN
10	TEN
11	ELV
12	TLV
13	TRN
14	FTN
15	FFN
16	SXN
17	SVT
18	ETN
19	NTN
20	TWY
21	TWON
22	TWTO
23	TWTH
24	TWFR
25	TWFV
26	TWSX
27	TWSV

28	TWET
29	TWNI
30	TRTY
31	TRON
32	TRTO
33	TRTH
34	TRFR
35	TRFV
36	TRSX
37	TRSV
38	TRET
39	TRNI
40	FRTY
FOOTBALL SYMBOL	WIN$
GOALPOST SYMBOL	WINX5
$5.00	FIV$
$10.00	TEN$
$20.00	TWY$
$50.00	FFTY$
$100	ONHN
$500	FVHN
$5,000	FVTH
$100,000	100TH

E. Serial Number - A unique thirteen (13) digit number appearing under the latex scratch-off covering on the front of the Scratch Ticket. The Serial Number is for validation purposes and cannot be used to play the game. The format will be: 0000000000000.

F. Bar Code - A twenty-four (24) character interleaved two (2) of five (5) Bar Code which will include a four (4) digit game ID, the seven (7) digit Pack number, the three (3) digit Ticket number and the ten (10) digit Validation Number. The Bar Code appears on the back of the Scratch Ticket.

G. Game-Pack-Ticket Number - A fourteen (14) digit number consisting of the four (4) digit game number (2664), a seven (7) digit Pack number, and a three (3) digit Ticket number. Ticket numbers start with 001 and end with 075 within each Pack. The format will be: 2664-0000001-001.

H. Pack - A Pack of "HOUSTON TEXANS" Scratch Ticket Game contains 075 Scratch Tickets, packed in plastic shrink-wrapping and fanfolded in pages of one (1). The Packs will alternate. One will show the front of Ticket 001 and back of 075 while the other fold will show the back of Ticket 001 and front of 075.

I. Non-Winning Ticket - A Scratch Ticket which is not programmed to be a winning Scratch Ticket or a Scratch Ticket that does not meet all of the requirements of these Game Procedures, the State Lottery Act (Texas Government Code, Chapter 466), and applicable rules adopted by the Texas Lottery pursuant to the State Lottery Act and referenced in 16 TAC, Chapter 401.

J. Scratch Ticket Game, Scratch Ticket or Ticket - A Texas Lottery "HOUSTON TEXANS" Scratch Ticket Game No. 2664.

2.0 Determination of Prize Winners. The determination of prize winners is subject to the general Scratch Ticket validation requirements set forth in Texas Lottery Rule 401.302, Scratch Ticket Game Rules, these Game Procedures, and the requirements set out on the back of each Scratch Ticket. A prize winner in the "HOUSTON TEXANS" Scratch Ticket Game is determined once the latex on the Scratch Ticket is scratched off to expose forty-five (45) Play Symbols. If a player matches any of the YOUR NUMBERS Play Symbols to any of the WINNING NUMBERS Play Symbols, the player wins the prize for that number. If the player reveals a "FOOTBALL" Play Symbol, the player wins the prize for that symbol instantly. If the player reveals a "GOALPOST" Play Symbol, the player wins 5 TIMES the prize for that symbol. No portion of the Display Printing nor any extraneous matter whatsoever shall be usable or playable as a part of the Scratch Ticket.

2.1 Scratch Ticket Validation Requirements.

A. To be a valid Scratch Ticket, all of the following requirements must be met:

1. Exactly forty-five (45) Play Symbols must appear under the Latex Overprint on the front portion of the Scratch Ticket;

2. Each of the Play Symbols must have a Play Symbol Caption underneath, unless specified, and each Play Symbol must agree with its Play Symbol Caption;

3. Each of the Play Symbols must be present in its entirety and be fully legible;

4. Each of the Play Symbols must be printed in black ink except for dual image games;

5. The Scratch Ticket shall be intact;

6. The Serial Number and Game-Pack-Ticket Number must be present in their entirety and be fully legible;

7. The Serial Number must correspond, using the Texas Lottery's codes, to the Play Symbols on the Scratch Ticket;

8. The Scratch Ticket must not have a hole punched through it, be mutilated, altered, unreadable, reconstituted or tampered with in any manner;

9. The Scratch Ticket must not be counterfeit in whole or in part;

10. The Scratch Ticket must have been issued by the Texas Lottery in an authorized manner;

11. The Scratch Ticket must not have been stolen, nor appear on any list of omitted Scratch Tickets or non-activated Scratch Tickets on file at the Texas Lottery;

12. The Play Symbols, Serial Number and Game-Pack-Ticket Number must be right side up and not reversed in any manner;

13. The Scratch Ticket must be complete and not miscut, and have exactly forty-five (45) Play Symbols under the Latex Overprint on the front portion of the Scratch Ticket, exactly one Serial Number and exactly one Game-Pack-Ticket Number on the Scratch Ticket;

14. The Serial Number of an apparent winning Scratch Ticket shall correspond with the Texas Lottery's Serial Numbers for winning Scratch Tickets, and a Scratch Ticket with that Serial Number shall not have been paid previously;

15. The Scratch Ticket must not be blank or partially blank, misregistered, defective or printed or produced in error;

16. Each of the forty-five (45) Play Symbols must be exactly one of those described in Section 1.2.C of these Game Procedures;

17. Each of the forty-five (45) Play Symbols on the Scratch Ticket must be printed in the Symbol font and must correspond precisely to the artwork on file at the Texas Lottery; the Scratch Ticket Serial Numbers must be printed in the Serial font and must correspond precisely to the artwork on file at the Texas Lottery; and the Game-Pack-Ticket Number must be printed in the Game-Pack-Ticket Number font and must correspond precisely to the artwork on file at the Texas Lottery;

18. The Display Printing on the Scratch Ticket must be regular in every respect and correspond precisely to the artwork on file at the Texas Lottery; and

19. The Scratch Ticket must have been received by the Texas Lottery by applicable deadlines.

B. The Scratch Ticket must pass all additional validation tests provided for in these Game Procedures, the Texas Lottery's Rules governing the award of prizes of the amount to be validated, and any confidential validation and security tests of the Texas Lottery.

C. Any Scratch Ticket not passing all of the validation requirements is void and ineligible for any prize and shall not be paid. However, the Executive Director may, solely at the Executive Director's discretion, refund the retail sales price of the Scratch Ticket. In the event a defective Scratch Ticket is purchased, the only responsibility or liability of the Texas Lottery shall be to replace the defective Scratch Ticket with another unplayed Scratch Ticket in that Scratch Ticket Game (or a Scratch Ticket of equivalent sales price from any other current Texas Lottery Scratch Ticket Game) or refund the retail sales price of the Scratch Ticket, solely at the Executive Director's discretion.

2.2 Programmed Game Parameters.

A. GENERAL: The top Prize Symbol will appear on every Ticket, unless restricted by other parameters, play action or prize structure.

B. GENERAL: Consecutive Non-Winning Tickets within a Pack will not have matching patterns, in the same order, of either Play Symbols or Prize Symbols.

C. KEY NUMBER MATCH: No prize amount in a non-winning spot will correspond with the YOUR NUMBERS Play Symbol (i.e., 05 and $5).

D. KEY NUMBER MATCH: There will be no matching non-winning YOUR NUMBERS Play Symbols on a Ticket.

E. KEY NUMBER MATCH: There will be no matching WINNING NUMBERS Play Symbols on a Ticket.

F. KEY NUMBER MATCH: A non-winning Prize Symbol will never match a winning Prize Symbol.

G. KEY NUMBER MATCH: A Ticket may have up to four (4) matching non-winning Prize Symbols, unless restricted by other parameters, play action or prize structure.

H. KEY NUMBER MATCH: The "FOOTBALL" (WIN$) Play Symbol may appear multiple times on winning Tickets, unless restricted by other parameters, play action or prize structure.

I. KEY NUMBER MATCH: The "GOALPOST" (WINX5) Play Symbol will only appear on winning Tickets, as dictated by the prize structure.

J. KEY NUMBER MATCH: The "FOOTBALL" (WIN$) and "GOALPOST" (WINX5) Play Symbols can appear together on the same Ticket.

2.3 Procedure for Claiming Prizes.

A. To claim a "HOUSTON TEXANS" Scratch Ticket Game prize of $5.00, $10.00, $20.00, $50.00, $100 or $500, a claimant shall sign the back of the Scratch Ticket in the space designated on the Scratch Ticket and may present the winning Scratch Ticket to any Texas Lottery Retailer. The Texas Lottery Retailer shall verify the claim and, if valid, and upon presentation of proper identification, if appropriate, make payment of the amount due the claimant and physically void the Scratch Ticket; provided that the Texas Lottery Retailer may, but is not required, to pay a $50.00, $100 or $500 Scratch Ticket Game. In the event the Texas Lottery Retailer cannot verify the claim, the Texas Lottery Retailer shall provide the claimant with a claim form and instruct the claimant on how to file a claim with the Texas Lottery. If the claim is validated by the Texas Lottery, a check shall be forwarded to the claimant in the amount due. In the event the claim is not validated, the claim shall be denied and the claimant shall be notified promptly. A claimant may also claim any of the above prizes under the procedure described in Section 2.3.B and Section 2.3.C of these Game Procedures.

B. To claim a "HOUSTON TEXANS" Scratch Ticket Game prize of $5,000 or $100,000, the claimant must sign the winning Scratch Ticket and may present it at one of the Texas Lottery's Claim Centers. If the claim is validated by the Texas Lottery, payment will be made to the bearer of the validated winning Scratch Ticket for that prize upon presentation of proper identification. When paying a prize of $600 or more, the Texas Lottery shall file the appropriate income reporting form with the Internal Revenue Service (IRS) and shall withhold federal income tax at a rate set by the IRS if required. In the event that the claim is not validated by the Texas Lottery, the claim shall be denied and the claimant shall be notified promptly.

C. As an alternative method of claiming a "HOUSTON TEXANS" Scratch Ticket Game prize, the claimant may submit the signed winning Scratch Ticket and a thoroughly completed claim form via mail. If a prize value is $1,000,000 or more, the claimant must also provide proof of Social Security number or Tax Payer Identification (for U.S. Citizens or Resident Aliens). Mail all to: Texas Lottery Commission, P.O. Box 16600, Austin, Texas 78761-6600. The Texas Lottery is not responsible for Scratch Tickets lost in the mail. In the event that the claim is not validated by the Texas Lottery, the claim shall be denied and the claimant shall be notified promptly.

D. Prior to payment by the Texas Lottery of any prize, the Texas Lottery shall deduct the amount of a delinquent tax or other money from the winnings of a prize winner who has been finally determined to be:

1. delinquent in the payment of a tax or other money to a state agency and that delinquency is reported to the Comptroller under Government Code §403.055;

2. in default on a loan made under Chapter 52, Education Code;

3. in default on a loan guaranteed under Chapter 57, Education Code; or

4. delinquent in child support payments in the amount determined by a court or a Title IV-D agency under Chapter 231, Family Code.

E. If a person is indebted or owes delinquent taxes to the State, other than those specified in the preceding paragraph, the winnings of a person shall be withheld until the debt or taxes are paid.

F. If a person is indebted or owes delinquent taxes to the State, and is selected as a winner in a promotional second-chance drawing, the debt to the State must be paid within 14 days of notification or the prize will be awarded to an Alternate.

2.4 Allowance for Delay of Payment. The Texas Lottery may delay payment of the prize pending a final determination by the Executive Director, under any of the following circumstances:

A. if a dispute occurs, or it appears likely that a dispute may occur, regarding the prize;

B. if there is any question regarding the identity of the claimant;

C. if there is any question regarding the validity of the Scratch Ticket presented for payment; or

D. if the claim is subject to any deduction from the payment otherwise due, as described in Section 2.3.D of these Game Procedures. No liability for interest for any delay shall accrue to the benefit of the claimant pending payment of the claim.

2.5 Payment of Prizes to Persons Under 18. If a person under the age of 18 years is entitled to a cash prize under $600 from the "HOUSTON TEXANS" Scratch Ticket Game, the Texas Lottery shall deliver to an adult member of the minor's family or the minor's guardian a check or warrant in the amount of the prize payable to the order of the minor.

2.6 If a person under the age of 18 years is entitled to a cash prize of $600 or more from the "HOUSTON TEXANS" Scratch Ticket Game, the Texas Lottery shall deposit the amount of the prize in a custodial bank account, with an adult member of the minor's family or the minor's guardian serving as custodian for the minor.

2.7 Scratch Ticket Claim Period. All Scratch Ticket Game prizes must be claimed within 180 days following the end of the Scratch Ticket Game or within the applicable time period for certain eligible military personnel as set forth in Texas Government Code §466.408. Any rights to a prize that is not claimed within that period, and in the manner specified in these Game Procedures and on the back of each Scratch Ticket, shall be forfeited.

2.8 Disclaimer. The number of prizes in a game is approximate based on the number of Scratch Tickets ordered. The number of actual prizes available in a game may vary based on number of Scratch Tickets manufactured, testing, distribution, sales and number of prizes claimed. A Scratch Ticket Game may continue to be sold even when all the top prizes have been claimed.

2.9 Promotional Second-Chance Drawings. Any Non-Winning "HOUSTON TEXANS" Scratch Ticket may be entered into one (1) of five (5) promotional drawings for a chance to win a promotional second-chance drawing prize. See instructions on the back of the Scratch Ticket for information on eligibility and entry requirements.

3.0 Scratch Ticket Ownership.

A. Until such time as a signature is placed upon the back portion of a Scratch Ticket in the space designated, a Scratch Ticket shall be owned by the physical possessor of said Scratch Ticket. When a signature is placed on the back of the Scratch Ticket in the space designated, the player whose signature appears in that area shall be the owner of the Scratch Ticket and shall be entitled to any prize attributable thereto. Notwithstanding any name or names submitted on a claim form, the Executive Director shall make payment to the player whose signature appears on the back of the Scratch Ticket in the space designated. If more than one name appears on the back of the Scratch Ticket, the Executive Director will require that one of those players whose name appears thereon be designated by such players to receive payment.

B. The Texas Lottery shall not be responsible for lost or stolen Scratch Tickets and shall not be required to pay on a lost or stolen Scratch Ticket.

4.0 Number and Value of Scratch Ticket Prizes. There will be approximately 5,400,000 Scratch Tickets in the Scratch Ticket Game No. 2664. The approximate number and value of prizes in the game are as follows:

Figure 2: GAME NO. 2664 - 4.0

Prize Amount	Approximate Number of Winners*	Approximate Odds are 1 in **
$5.00	576,000	9.38
$10.00	648,000	8.33
$20.00	144,000	37.50
$50.00	42,300	127.66
$100	20,655	261.44
$500	1133	4766.11
$5,000	10	540,000.00
$100,000	4	1,350,000.00

*The number of prizes in a game is approximate based on the number of tickets ordered. The number of actual prizes available in a game may vary based on number of tickets manufactured, testing, distribution, sales and number of prizes claimed.

**The overall odds of winning a prize are 1 in 3.77. The individual odds of winning for a particular prize level may vary based on sales, distribution, testing, and number of prizes claimed.

A. The actual number of Scratch Tickets in the game may be increased or decreased at the sole discretion of the Texas Lottery Commission.

5.0 End of the Scratch Ticket Game. The Executive Director may, at any time, announce a closing date (end date) for the Scratch Ticket Game No. 2664 without advance notice, at which point no further Scratch Tickets in that game may be sold. The determination of the closing date and reasons for closing will be made in accordance with the Scratch Ticket Game closing procedures and the Scratch Ticket Game Rules. See 16 TAC §401.302(j).

6.0 Governing Law. In purchasing a Scratch Ticket, the player agrees to comply with, and abide by, these Game Procedures for Scratch Ticket Game No. 2664, the State Lottery Act (Texas Government Code, Chapter 466), applicable rules adopted by the Texas Lottery pursuant to the State Lottery Act and referenced in 16 TAC, Chapter 401, and all final decisions of the Executive Director.

TRD-202502525
Bob Biard
General Counsel
Texas Lottery Commission
Filed: July 16, 2025

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Public Utility Commission of Texas

Notice of Application to Adjust High Cost Support Under 16 TAC §26.407(H)

Notice is given to the public of an application filed with the Public Utility Commission of Texas (Commission) on July 10, 2025, seeking a determination of need for continued support from the Small and Rural Incumbent Local Exchange Company Universal Service Plan.

Docket Title and Number: Application of Industry Telephone Company, Inc. to Adjust High-Cost Support under 16 TAC §26.407(h), Docket Number 58364.

The Application: Industry Telephone Company, Inc. requests a high-cost support adjustment increase of $293,272 in annual high-cost support. According to Industry Telephone, the requested adjustment complies with the cap of 140% of the annualized support the provider was authorized to receive in the 12 months ending May 31, 2025, as required by 16 Texas Administrative Code §26.407(g)(1).

Persons wishing to comment on the action sought should contact the Public Utility Commission of Texas by mail at P.O. Box 13326, Austin, Texas 78711-3326, or by phone at (512) 936-7120 or toll free at 1-888-782-8477 as a deadline to intervene may be imposed. Hearing and

speech-impaired individuals with text telephone (TTY) may contact the commission through Relay Texas by dialing 7-1-1. All comments should reference Docket Number 58364.

TRD-202502515
Andrea Gonzalez
Rules Coordinator
Public Utility Commission of Texas
Filed: July 15, 2025

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Notice of Application to Amend Designation as an Eligible Telecommunications Carrier

Notice is given to the public of an application filed with the Public Utility Commission of Texas on July 2, 2025, to relinquish its eligible telecommunications carrier designation under 16 Texas Administrative Code §26.418.

Docket Title and Number: Application of Skybeam LLC dba Rise Broadband to Relinquish Its Eligible Telecommunications Carrier Designation, Docket Number 58329.

The Application: Skybeam requests to relinquish its designation as an eligible telecommunications carrier in the State of Texas effective September 30, 2025, or as soon as practicable.

Persons who wish to comment on this application should notify the Public Utility Commission by August 14, 2025. Requests for further information should be mailed to the Public Utility Commission of Texas, P.O. Box 13326, Austin, Texas 78711-3326, or you may call the PUCT Consumer Protection Division at (512) 936-7120 or (888) 782-8477. Hearing- and speech-impaired individuals may contact the commission through Relay Texas at (800) 735-2989. All comments should reference Docket Number 58329.

TRD-202502319
Andrea Gonzalez
Rules Coordinator
Public Utility Commission of Texas
Filed: July 10, 2025

♦ ♦ ♦

Texas Department of Transportation

Public Notice - Photographic Traffic Signal Enforcement Systems: Municipal Reporting of Traffic Crashes

The Texas Department of Transportation (department) is requesting that each municipality subject to the requirements of Transportation Code § 707.004(d) provide the required data to the department **no later than October 31, 2025** in order for the department to meet the deadline for an annual report mandated by the Texas Legislature.

Pursuant to Section 7 of House Bill 1631, 86th Legislature, Regular Session, municipalities meeting certain criteria may continue to operate photographic traffic signal enforcement systems. Pursuant to Transportation Code § 707.004(d), each such municipality must continue to compile and submit to the department annual reports after installation showing the number and type of crashes that have occurred at the intersection.

Those municipalities that do not meet the criteria contained in Section 7 of House Bill 1631, 86th Legislature, Regular Session can no longer implement or operate photographic traffic enforcement systems with respect to highways or streets under their jurisdiction.

The department is required by Transportation Code § 707.004 to produce an annual report of the information submitted to the department by December 1 of each year.

The department has created a web page detailing municipal reporting requirements and to allow the required data to be submitted electronically:

https://www.txdot.gov/safety/traffic-signs-signals/red-light-cameras/annual-reports.html

For additional information contact the Texas Department of Transportation, Traffic Operations Division, 125 East 11th Street, Austin, Texas 78701-2483 or call (512) 416-3260.

TRD-202502313
Becky Blewett
Deputy General Counsel
Texas Department of Transportation
Filed: July 9, 2025

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How to Use the Texas Register

Information Available: The sections of the *Texas Register* represent various facets of state government. Documents contained within them include:

Governor - Appointments, executive orders, and proclamations.

Attorney General - summaries of requests for opinions, opinions, and open records decisions.

Texas Ethics Commission - summaries of requests for opinions and opinions.

Emergency Rules - sections adopted by state agencies on an emergency basis.

Proposed Rules - sections proposed for adoption.

Withdrawn Rules - sections withdrawn by state agencies from consideration for adoption, or automatically withdrawn by the Texas Register six months after the proposal publication date.

Adopted Rules - sections adopted following public comment period.

Texas Department of Insurance Exempt Filings - notices of actions taken by the Texas Department of Insurance pursuant to Chapter 5, Subchapter L of the Insurance Code.

Review of Agency Rules - notices of state agency rules review.

Tables and Graphics - graphic material from the proposed, emergency and adopted sections.

Transferred Rules - notice that the Legislature has transferred rules within the *Texas Administrative Code* from one state agency to another, or directed the Secretary of State to remove the rules of an abolished agency.

In Addition - miscellaneous information required to be published by statute or provided as a public service.

Specific explanation on the contents of each section can be found on the beginning page of the section. The division also publishes cumulative quarterly and annual indexes to aid in researching material published.

How to Cite: Material published in the *Texas Register* is referenced by citing the volume in which the document appears, the words "TexReg" and the beginning page number on which that document was published. For example, a document published on page 2402 of Volume 50 (2025) is cited as follows: 50 TexReg 2402.

In order that readers may cite material more easily, page numbers are now written as citations. Example: on page 2 in the lower-left hand corner of the page, would be written "50 TexReg 2 issue date," while on the opposite page, page 3, in the lower right-hand corner, would be written "issue date 50 TexReg 3."

How to Research: The public is invited to research rules and information of interest between 8 a.m. and 5 p.m. weekdays at the *Texas Register* office, James Earl Rudder Building, 1019 Brazos, Austin. Material can be found using *Texas Register* indexes, the *Texas Administrative Code* section numbers, or TRD number.

Both the *Texas Register* and the *Texas Administrative Code* are available online at: https://www.sos.texas.gov. The *Texas Register* is available in an .html version as well as a .pdf version through the internet. For website information, call the Texas Register at (512) 463-5561.

Texas Administrative Code

The *Texas Administrative Code (TAC*) is the compilation of all final state agency rules published in the *Texas Register*. Following its effective date, a rule is entered into the *Texas Administrative Code*. Emergency rules, which may be adopted by an agency on an interim basis, are not codified within the *TAC*.

The *TAC* volumes are arranged into Titles and Parts (using Arabic numerals). The Titles are broad subject categories into which the agencies are grouped as a matter of convenience. Each Part represents an individual state agency.

The complete *TAC* is available through the Secretary of State's website at http://www.sos.state.tx.us/tac.

The Titles of the *TAC*, and their respective Title numbers are:

1. Administration
4. Agriculture
7. Banking and Securities
10. Community Development
13. Cultural Resources
16. Economic Regulation
19. Education
22. Examining Boards
25. Health Services
28. Insurance
30. Environmental Quality
31. Natural Resources and Conservation
34. Public Finance
37. Public Safety and Corrections
40. Social Services and Assistance
43. Transportation

How to Cite: Under the *TAC* scheme, each section is designated by a *TAC* number. For example in the citation 1 TAC §91.1: 1 indicates the title under which the agency appears in the *Texas Administrative Code*; *TAC* stands for the *Texas Administrative Code*; §91.1 is the section number of the rule (91 indicates that the section is under Chapter 91 of Title 1; 1 represents the individual section within the chapter).

How to Update: To find out if a rule has changed since the publication of the current supplement to the *Texas Administrative Code*, please look at the *Index of Rules*.

The *Index of Rules* is published cumulatively in the blue-cover quarterly indexes to the *Texas Register*.

If a rule has changed during the time period covered by the table, the rule's *TAC* number will be printed with the *Texas Register* page number and a notation indicating the type of filing (emergency, proposed, withdrawn, or adopted) as shown in the following example.

TITLE 1. ADMINISTRATION
Part 4. Office of the Secretary of State
Chapter 91. Texas Register
1 TAC §91.1…….....950 *(P)*

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